DOCUMENT RESUME

ED 149 401 CS 501 962

AUTHOR Howkins, John, Ed.
TITLE [Thematic Issue: International Communications.]
INSTITUTION International Inst. of Communications, London (England).
PUB DATE Dec 77
NOTE 35p.
JOURNAL CIT InterMedia; v5 n6 Entire Issue December 1977

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Broadcast Industry; *Communications; Conferences; *Developing Nations; Financial Support; *Foreign Countries; *Information Networks; *International Relations; Mass Media; Technical Assistance; Telecommunication; *Television Research; Television Viewing; Violence

ABSTRACT

The five major articles in this document examine a variety of subjects: communication issues involved in the upcoming United Nations conference "Technical Ccoperation among Developing Countries"; the fundamental role that information plays in the economy and in social structures of advanced industrial economies; an investigation into the relationship between long-term exposure to television violence and the behavior and attitudes of adolescent boys in London; the aims, past and present activities, and hopes of the European Broadcasting Union; and sources of funding for telecommunications in the space age. Brief notes are provided on broadcasting events in the United States and in many other countries, including Ireland, Australia, France, Spain, Argentina, and the Netherlands. (GW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

[THEMATIC ISSUE: INTERNATIONAL COMMUNICATIONS]

ED149401

INTERMEDIA

International Institute of Communications

December 1977, Vol 5 No 6

This Issue

TCDC — see page 10

The Information Society by Jean Voge

The EBU by Régis de Kalbermatten, EBU Secretary General

TV and Violence

Adding South-South to the Map	1
Ireland Expands Second Channels	2
CB Legalised in Australia	2
France Appoints Cable Commission	3
Warners Starts Two-Way Qube	3
Spain Liberalises Radio News	3
Australia's New Broadcasting Bill	4
Europeans Hesitate About ENG	4
Argentine Turns to Private TV/Radio	5
Global Meteorological Satellite System	5
New Deal for US Public Broadcasting	6
IIC Report on Netherlands	6
Briefly	7
TDCD: Technical Cooperation among Developing Countries	10
Information Growth and Economic Crisis by Jean Voge	15
TV Violence and Adolescent Boys by William Belson	20
The EBU by Régis de Kalbermatten	25
Finance for Space Telecommunications by J.L. Blonstein	31
The BBC as Institution	33
Resource Material	33
Broadcasting Unions	36

Adding South-South to the World Communications Map

THE DOMINANT models and patterns of development are being questioned and criticised in all parts of the world. Many of the processes of development — the policies, campaigns, projects — are undergoing a serious crisis in most Third World countries. The conventional thinking on development, both there and in the industrial world, is being challenged.

New dimensions have been added. The original exclusive concern with economic growth and modernisation, as perceived mainly from a Western point of view, has proved inadequate. Later, a social dimension was added; then in the 1970s, an environmental dimension; and now, still hesitantly, what can be called a human dimension in which culture and communications may find their rightful place.

Development thinking and action was originally perceived as a transferral of knowledge and information, of capital, technology, experts and administrative techniques, from the "developed" to the "developing world".

It was primarily a movement from North to South, based on the assumption that development in the South would follow the pattern of development in the North. The theories underlying this approach are now seen to be incorrect, both as theories of history and as theories of development. Worse, the actual performance of conventional "technical assistance" has proved woefully inadequate.

A major step in the extension of the wider concepts of development and the international order is the concept of 'Technical Cooperation between Developing Countries'. The thrust of TCDC is the attempt to modify the historical, geopolitical, patterns of development, and to generate new international economic, technical, social and cultural relationships.

The UN Conference on TCDC, which is planned for next year, will embrace the entire spectrum of development processes. It will not spring from any particular sector or any problem that has been newly perceived (as, for instance, the UN conferences on habitat and desertification). It will be multi-disciplinary and omni-sectoral.

The TCDC conference will take major steps "towards the redrawing of the utilisation map of the communications and resources — both intellectual and material — of our planet. We are embarked upon a crucial endeavour to help re-engage and re-integrate the aspirations, rights and energies of some two billion human beings in the total fabric of the world . . . we are seeking to restore a balance, new means for peoples to listen to peoples, so that nations can choose in more genuine freedom what they can usefully select from other experiences".

These words from a statement by Bradford Morse, Administrator of the United Nations Development Programme and Secretary-General of the UN Conference on TCDC, show the crucial importance of communications. We are therefore particularly pleased that he has has accepted to write a statement for 'InterMedia', and that Erskine Childers, Director of Information, UNDP, has analysed the various communication issues.

These statements are particularly apposite since the Institute has always sought to foster the evolution of new communication patterns within and between countries. Its seminars in Ibadan and Georgetown in 1974 provided an exchange of information and experience between experts from developing countries. It is characteristic of the Institute that its members in all regions of the world are concerned with developing networks of the most appropriate and, if appropriate, multi-dimensional kind.

E.W.P.

PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

International Institute of Communications

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND TO USERS OF THE ERIC SYSTEM.

U.S. DEPARTMENT OF HEALTH EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Ireland Expands Second Channels

CURRENT PLANS by Radio Telefis Eireann, the Irish broadcasting authority, are well advanced for opening second channels in both the TV and radio services. RTE's two-stage development programme envisages developing the new channels in 1978-81. In the second stage, 1981-86, the emphasis will be on local radio.

RTE sees as the main priority the development of a complete second TV service.

At present, about half the country (roughly, the western half) can receive only one TV channel, RTE's single national service. However, the rest of the country (roughly, the eastern parts nearest the UK), can receive not only RTE but also the three UK channels.

RTE's single channel has to compete in these eastern areas with the BBC's two complementary channels and with ITV. All three are comparatively wealthy and high-quality.

The result is doubly disadvantageous. By having to schedule all programmes on the one channel, RTE cannot provide a strong competitive alternative to the three UK channels. And in the western parts, neither the majority or minority interests of the audience can be properly served.

In its first few years, until additional studios and other infrastructural requirements are available, the second TV channel will rely heavily on imported programming. Home production will be confined to film and outside broadcasts, and whatever studio programming can be diverted from Channel 1. The ultimate aim is to have a fully-complementary two-channel service, with RTE-2 providing 36 hours a week, of which 8 hours would be home produced.

RTE has stated that the overriding purpose of the two-channel service is to give all viewers in the country a choice of programmes at all times. It hopes to carry one programme of broad popular appeal on one of the channels at all peak viewing hours. It will also show a wide range of the best programmes available from the two British networks and from other countries. In home-produced programming, there will be a greater emphasis on regional affairs, local news and events and direct 'access' broadcasting.

A second full-time national radio channel is also a high priority. A VHF network for an additional national service already exists, and the new RTE radio centre can provide most of the necessary studio and production facilities. Until VHF set-ownership and listenership improve, the intention is to duplicate this second service on both VHF and MF.

The service has already commenced on a part-time basis and will be extended in stages to a full-time schedule. RTE sees it as permitting more balanced and comprehensive programming, ensuring a better service for minorities, more adult education, and more outlets for further artistic and creative endeavour.

The next development – which will probably proceed simultaneously with the consolidation of the second radio and television channels – is the extension of local radio. At present, local radio is confined to a daily one-hour opt-out from the RTE Cork MF transmitter. Plans are advanced for RTE to have five or six additional local radio stations on MF. The first two such stations will be Radio Shannonside, serving the Limerick-Shannon region, and Radio Dublin.

The IIC is publishing a survey on Ireland in its series of case studies on Broadcasting systems. The author is Desmond Fisher. It will be available in March 1978.

CB Legalised in Australia

CITIZENS' BAND two-way radio services have been legalised in Australia after flourishing illegally but openly for over a year. The Ministry of Posts and Communications has allocated channels in the 27 and 476 MHz bands, and set up a licence ystem which will cost the user $20 a year.

The illegal operators numbered about 50,000 and used sets imported from the USA and Japan. Most of the sets provided 23 channels in the 27 MHz band. The Australia government has allocated only 18 channels in this band, to prevent interference with existing radio services, and another 40 channels in the UHF band between 476.425 and 477.400 MHz.

The Minister has indicated clearly that CBers must cease using the 27 MHz band by 1982 and restrict themselves to UHF.

In Australia as elsewhere the existing amateur (ham) radio operators have been markedly hostile to CB. Part of the amateurs' arguments are about the allocation of the spectrum, and part about CBers behaviour when operating. The more traditional amateurs regard the CBers as disorganised, and slack about identifying themselves and avoiding interference.

In Europe most governments have accepted the proposals on Citizens' Band which the Conference Européene des Postes et Télécommunications (CEPT), the association of government authorities, made in 1975. These proposals set guide-lines for a CB service of 12 channels on 27 KHz, with as few government regulations as possible.

The West German bundespost was one of the first to implement the CEPT proposals. It set a monthly licence fee of DM 15. There are probably slightly over 500,000 operators in West Germany at the moment.

Several Scandinavian countries and the Netherlands have also approved a 27 MHz service.

The most recent official UK statement was in August when the prime ministers' office said that a CB service would be at the expense of some other services, that it would create serious problems of control and that British manufacturers were not in favour. It is felt, however, that the manufacturers may well be more in favour than the government indicates. But the machinery for changing spectrum allocation does not move very quickly.

The Home Office is likely to wait until the 1979 World Administrative Radio Conference is over; and it may prefer a much higher frequency than 27 MHz, which is subject to interference with VHF television.

In the USA and Canada, meanwhile, CB continues to expand dramatically. In September, over 600,000 Canadians held licences for CB (called the General Radio Service). This total is higher than that for all other classes of radio users combined.

France Appoints Cable Commission

A FRENCH government commission on cable television has been set up, and community networks defined, in two decrees published by the prime minister in the 'Journal Officiel' on 30 September The two decrees have been long awaited by French cable interests.

The commission's main tasks will be to monitor the technical specifications and standards adopted by Télédiffusion de France (TDF) which is responsible for TV/radio transmission, and by the Ministry of Posts et Télécommunications (PTT).

The ten-strong body includes three representatives each of the TDF and PTT, two of the Ministry of Commerce, and one each from the Ministry of Economy and Finance, and of the Interior.

The definition of community networks given in the second decree uses the word "community" to apply mainly to the location of a network, not to the nature of its programming.

It says, in part, that a community network "est exclusivement utilisé à la distribution des programmes du service public national de la radiodiffusion-télévision diffusés par voie hertzienne et éventuellement des programmes des organismes d'émission étrangers, lorsque les signaux correspondents peuvent etre normalement recus par la voie hertzienne dans la limite du territoire concerné".

In translation, the decree says that this kind of network is used exclusively to distribute the programmes of the national TV/radio organisations that are broadcast by radio wave as well as, if the possibility arises, the programmes of foreign broadcasting organisations so long as the over-the-air signals can be picked up in the normal manner in the area concerned.

The decree states clearly that the implementation of such networks is the exclusive responsibility of the TDF.

The traditional approach of both decrees has disappointed those who had hoped the prime minister would take this opportunity to encourage local programming and community involvement.

Cable activity in France has been dormant since the closure of Grenoble in the Spring of 1976 after central government had withdrawn its funds. The other six experimental stations that, with Grenoble, had been announced in 1973 never became fully operational. The Société Francaise de Télédistribution, established in 1972 to guide the seven projects, is also largely inactive.

Spain Liberalises Radio News

ALL SPANISH radio stations are now allowed to produce their own news programmes, following a government announcement in early October.

The announcement ended almost 30 years of virtual State monopoly during which almost all radio stations could broadcast only the twice-daily bulletins of the State's Radio Nacional.

Most of Spain's 150 radio stations are owned by the State. However, the private stations have a considerable audience.

Since General Franco died, some private stations have been presenting their own news alongside the State's news. The State has been fairly tolerant about such technical breaches of the law, especially as virtually all stations continued to re-broadcast Radio Nacional's news. From now on, stations can broadcast only their own news and current affairs programmes.

Broadcasting in Spain is being liberated much more slowly than other media – newspapers, theatre, music. The news on the two TV channels, for instance, is still under State control.

Warners Starts Two-Way Qube

WARNER'S two-way cable system in Columbus, Ohio, opened on 1 December. Called Qube, the system sends 30 TV channels downstream and 2 data channels both ways. About 10,000 homes are connected to Qube (with another 27,000 connected to Warner's existing one-way system) with a potential target of 100,000 homes.

Each subscriber is given a handheld, remote-control set with 15 buttons, and a converter. Installation costs $19.95 ($9.95 to subscribers to the one-way system) and the monthly fee $18.45 ($7.50 for existing subscribers). In addition, some programmes will carry a special extra charge.

The conventional one-way TV channels are continuing to carry, as before, four local stations, five distant stations, programme guides, weather, 'access' programmes, etc.

The two-way community channels carry outside broadcasts, consumer information, pre-school programmes, news, stocks and financial information, religion, weather, and "selected audience programmes".

The nine premium channels will show first-run movies ($3-3.50 each); classic oldies ($1); opera, ballet and classical music ($2-2.50); and instruction, special events, sports events, participatory games, college credit courses, etc, with varying prices. The December first-run movies include 'A Star is Born', 'Silent Movie' and 'Amarcord'.

Five additional channels will carry stereo music on a 24-hour, non-stop, basis at a cost of $10 for installation, with no monthly fee.

These music channels will not carry advertisements. But the other channels will, although advertising at this stage will probably not bring in much revenue. Warner have built one studio in a shopping precinct, which will transmit a programme called 'Columbus Alive' with an expected high number of advertisements. It has three other studios, which are reportedly very well equipped.

A computer bills all subscribers on a monthly basis and can also provide a minute-by-minute print-out of all homes that are using the system.

All subscribers receive a monthy magazine listing all Qube offering but not regular TV programming.

Although regular service started 1 December, Qube's first two-way transmission was on 12 November when viewers of a football game were asked to guess what play would be called at each touch-down.

New Deal For US Public Broadcasting

A NEW plan for US public broadcasting was announced by President Carter on 6 October. The opening sentence of the President's message to the Congress stated the aim was to "strengthen our public broadcasting system and to insulate it from political manipulation".

The White House's Public Broadcasting Financing Act, 1978 (HR 9620), would result in a substantially increased budget for public TV and radio, and a major restructuring of the two services.

Carter spoke first about what public broadcasting had achieved in the ten years since the Public Broadcasting Act: "public broadcasting has set new standards in childrens' programmes, drama, music, science, history and educational services. Its coverage of local, state and national hearings, its documentaries and its in-depth news analyses, have helped make government more understandable"

The priorities for the future, according to the White House, are to strengthen the national TV service of cultural and current affairs; to support and expand National Public Radio; to make best use of the planned satellite interconnection and other new technologies; to extend coverage; to extend instructional and educational programming; to increase opportunities for women and minorities (black, racial, etc); and to support local programming.

To accomplish these objectives the Act would put public broadcasting on a more secure financial basis, and clarify the functions, recently rather confused, of the main agencies. These are the federal agency, the Corporation for Public Broadcasting and, on the other hand, the stations' organisations, the Public Broadcasting Service and National Public Radio.

The new bill proposes a five-year funding of CPB of $180 million for 1981 (the current Act allows a funding, currently being considered by Congress, of $152 million for 1980). For the four years 1982-5 the bill proposes funding at the level of $200 million a year (again, Congress will decide the actual amount). The funding would total $1 billion over the five years.

Given this long-range funding, the President proposes the Corporation for Public Broadcasting should concentrate on its task of "system overseer, operating much like an endowment or foundation". CPB would stop deciding which particular programme or series it will fund (an activity which led to several clashes with PBS earlier this year). Its job would be "overall system development".

CPB could stipulate particular areas of programmes, but not individual projects. As a result, recipients of CPB money would be much freer to choose their own themes and slants.

The bill encourages public broadcasters to take independent editorial stances. Unlike commercial broadcasters, public broadcasters are forbidden by current law to editorialise on issues of public importance. Carter pointed out that Congress had recently amended the law to allow private non-profit organisations "to advocate positions on public issues and the Public Broadcasting Act should be similarly amended to allow non-governmental licencees to exercise their First Amendment rights".

Starting in 1981, 25% of CPB's funding (ie, 25% of a possible $200 million) would be earmarked for national programming. These programmes would be produced on a decentralised basis throughout the country but would be intended for national distribution.

Carter called on the public broadcasting system to devote a similar 25% of the federal grant to this kind of national programming (up from the current 17%). If this happened, national programming would have a possible $100 million a year.

Other sections of the bill would require CPB to maintain an inventory of all programme grants and function as a sort of "clearing-house" for grant information (which would be enormously helpful to independent producers).

All public broadcasting stations would be required to open board meetings and financial records to the public. Four members of the CPB Board, currently appointed by the President, would be appointed by PBS and NPR (two each) in order to help depoliticise the Board and to increase the stations' involvement in CPB.

The House and Senate are expected to hold full hearings in February 1978 so the bill could be enacted by early summer. If enacted, it would be both an amendment to the Communications Act of 1934 and an Act in its own right. In most cases, the provisions of the Act would take effect on on 1 October 1978.

IIC Report on Netherlands

The fourth book in the IIC series of Case Studies on Broadcasting Systems, Broadcasting in the Netherlands *(Routledge & Kegan Paul, London, £3.50 or $7.95) will be published on 29 December. The author is Kees van der Haak, Head of the Studies and Documentation Service of NOS. The 106 pp book follows the others in the series on Sweden, Peninsular Malaysia and Canada.*

Broadcasting in the Netherlands *describes the historical traditions of Dutch society, recounts the ways in which radio and later TV were set up, and shows how recent changes in Dutch politics, culture and economy, the demand for more freedom of information on the air, and technological innovation, have posed a new set of challenges that Dutch society has to find answers to. At the moment, parliament is considering legislation which, if enacted, would drastically revise the current broadcasting act.*

Like other books in this series, Broadcasting in the Netherlands *concentrates on providing the factual basis of the country's TV and radio. This volume describes how the Dutch broadcasting system is rooted in traditional society more deeply, perhaps, than is the case in other countries, and what the relationship is between the government and the broadcasters, and how advertising is regulated.*

The hallmark of the Dutch broadcasting system is the role of the broadcasting associations. These independent companies, tied to political, religious and other interests, are co-ordinated by NOS and have given Dutch broadcasting a reputation for openness, access and balance. Yet, as this book shows, change and developments in the system may be urgently required.

Copies are available from the IIC and from agents of Routledge & Kegan Paul. IIC members who order direct from the IIC qualify for a discount of 35%.

Briefly

☐Non-Aligned Broadcasters

The first Conference of Broadcasters Organisations in Non-Aligned Countries was held in October in Sarajevo. Delegates discussed imbalances in technical equipment, programme flow, and the allocation of radio frequencies and questions of training and exchange. A cooperation committee was set up with six Asian members (Afghanistan, India, Iraq, Jordan, Korea [DR], Malaysia); nine African members (Algeria, Guinea, Kenya, Nigeria, Tanzania, Togo, Tunisia, Zaire, Zambia); three Latin American members (Cuba, Panama, Peru) and one European (Yugoslavia). The next conference will be held in Sierra Leone.

☐New Telecoms Institute

A new Institut pour le Developpement et l'Amenagement des Télécommunications et de l'Economie (IDATE) has been set up in Montpellier, France. It will carry out original studies on the social, economic and geographical aspects of telecommunications. Specific topics will include models of telecommunications growth; social and economic aspects of message content; and telecommunications in rural areas.

☐Italy: Relays Closed

The Italian government has closed down the border relay stations carrying Swiss and Yugoslav TV services to Milan and northern Italy. The government justified its actions by saying the transmissions were interfering with national aeronautical and military services. Both Ticino-TV in Switzerland and Capodistria in Yugoslavia had been used by Italian companies to advertise cheaply to Italian households.

☐Pan-African News Agency

The Organisation of African Unity took first steps on 12 November to set up an Pan-African News Agency (PANA). Ministers of Information of OAU, meeting in Kampala, established a 17-country council and a secretariat. The Ministers also recommended African countries should increase regional and continental cooperation.

☐Intelsat Leases

Eleven countries now lease transponders on Intelsat satellites, providing the international satellite organisation with about 7% of its income. Nigera leases three transponders, while Algeria, Brazil, Malaysia, Sudan and Uganda each lease one. Norway, France and Spain each lease half a transponder. Oman and Saudi Arabia each lease one-fourth of a transponder. Zaire (one transponder) and Colombia and Chile (one-fourth) have received approval for leasing but their systems are not yet operational.

☐Record US Profits

Profits of the US broadcasting industry just topped $1 billion in 1976 for the first time ever, an increase over 1975 of 60%. TV revenues were over $6 billion (net $5.2 billion) and expenses nearly $3.9 billion.

But costs are rising, too. The three networks have had to pay $576 million to the National Football League to televise NFL games over the next four years. For the first time in football's history, income from TV rights will exceed money taken from spectators at the ground.

☐Through the Earth

The first radio signal to be transmitted through the Earth, instead of around it, could take place next year. A group of physicists at Western Washington University, USA, has developed a technique of using neutrino particles which have no electrical charge and no mass, and which pass easily through most matter. The physicists hope to use a 400-billion-electron-volt particle accelerator in Illinois to send a beam downwards at an angle of about 12° to a million-ton stretch of water near Seattle. The first application of neutrino transmission, if successful, is likely to be used by the US Navy to communicate with submarines in deep water.

☐USA: Showtime Pay-TV

A national Pay-TV network will be set up by Viacom early next year in the USA. The network, called Showtime, will use two RCA satellites to distribute uncut movies and special entertainment events between 9 and 12 hours each day. Showtime will compete directly with Time Inc's Home Box Office (HBO), a five-year-old operation that recently announced its first profits.

☐UNESCO Commission

An advisory group on world communication problems has been set up by UNESCO. The 16-member group is chaired by Sean Mac Bride, Nobel Peace Prize winner and former UN Commissioner for Namibia. It will be supported by an "outer circle" of 60 experts on all aspects of communications.

The idea of the group was first proposed at the UNESCO General Conference in 1976 in Nairobi. The group held its first meeting in December. It is expected to make a preliminary report to the 1978 General Conference, and its final report in Autumn 1979.

The group's purpose is to investigate and clarify the entire range of communication issues with which UNESCO is concerned, or may be concerned. It follows UNESCO's successful Commission on the Future of Education whose report 'Learning to Be', published in 1972, had considerable impact on the development of education both for UNESCO and outside. The advisory group on communications is also to be known as a commission.

The secretary of the advisory group is Mr Deleon, who was secretary to the Commission on Education.

☐Journalists in Europe

Journalists in Europe, the Paris-based training organisation, will run its fifth course for journalists from November 1978 to June 1979. The course is for experienced journalists from all parts of the world who want to improve their understanding of Europe. The course is recognised and partly funded by the European Economic Community. Other funds come from scholarships from governments and private bodies, and from media and industrial organisations.

The journalists on the course will visit EEC institutions and meet international civil servants, government officials, business executives, journalists and academics. The increasing significance of the EEC's role in Europe and the scheduled direct elections to the European parliament led last year to a much greater demand for course places.

Applications should reach Maribel Bahia, Executive Manager, Journalists in Europe, Centre International de Formation, 33 rue du Louvre, 75002 Paris, by 15 March 1978

SHORT NOTES

Tanzania: TNA Appointments

The government of Tanzania has appointed the Mainland Minister for Information and Broadcasting as Chairman of the Board of Directors of the new Tanzania News Agency. The TNA has an overall monopoly of the collection and distribution of news about Tanzania both in Tanzania and abroad. (See InterMedia, Vol 5, page 32). Among the other Board members are the Zanzibar Principal Secretary to the Minister of Information, Broadcasting and Television; the managing editor of the party newspapers 'Uhuru' and 'Mzalendo'; the managing editor of the government newspapers 'Daily News' and 'Sunday News'; and the mainland Director of Broadcasting.

Colombia: TV Expansion

Colombia has started a major expansion of its TV and radio services. The second TV channel will be extended to the Atlantic coast and Santander province. The Instituto Nacional de Radio y Televisión is replacing and strengthening most of its transmitters.

In Bogotá, Dr Victor Beltrán Martinez has been appointed President of the Empresa Nacional de Telecommunicaciones.

Communications and Law

The Conference on the Law of the World, which meets every two years, discussed this year, for the first time ever, a number of issues on communications. The five-day Conference was held in Manila and attended by over 7,000 lawyers from 140 countries. The panel session on 'Mass Communication, Freedom of the Press and Rights of Man' was best-attended of all. Resolutions were passed on Human Rights, the Helsinki Agreement, direct broadcast satellites and copyright.

Europe's Big Satellite

The contract to build the European Space Agency's large experimental communications satellite has been awarded to a European consortium called Eurosatellite which is led by Aerospatiale (SNIAS). The 2,000 lb satellite is budgeted at about £37 million and launch is scheduled for 1980. The main transponders will work in the 11-14 GHz band which is allocated to direct broadcasting, with some capacity in the 20-30 GHz band. Aerospatiale has previously worked on ESA's Meteosat satellite and is also involved in the Ariane launcher project.

Archive Commissions

Three commissions on TV archives were set up by the International Federation of Television Archives (FIAT) at its general assembly on 12-14 October in Paris. A commission on documentation will prepare a catalogue of materials on "ecology" and will investigate ways in the middle and long term of exchanging information on TV archives (under the chairmanship of Mr. Costi, RAI). A second commission, chaired by Anne Hanford, BBC, will look at archives and libraries within TV organisations, with a specific focus on conservation. The third commission, chaired by Ms Saintville, INA, will discuss training.

Canada: TV Parliament

TV cameras were allowed into the Canadian federal government in Ottawa for the first time on 18 October. They will televise Question Time on a regular basis.

Sun and Earth

The International Sun Earth Explorers project become operational on 22 October when NASA launched the US satellite ISEE-1 and the European ISEE-2. A third satellite, ISEE-3 is scheduled for launching in June 1978 into a heliocentric orbit. The three satellites will analyse how the Sun controls the Earth's near space environment. The project follows recent discoveries that "space weather" is much more dynamic and changeable than the weather witnessed on Earth.

Cable Lottery

The directors of Swindon Viewpoint, the company operating what is virtually the last of the UK's first group of five experimental cable TV stations, has decided to run a lottery. They regard the scheme as the only means of collecting enough revenue to continue transmissions.

Electronic Print

Sales of electronic text systems to European publisheres are expected to increase by 20% a year from £41 million in 1976 to £149 million in 1982, according to a survey carried out by Pierre Quervel for Inca-Fiej Research Association. US sales, however, are expected to be even higher, because the US is a larger market, speaking one language, and with both management and trade unions have a keener interest in innovation.

UK: PO Monopoly Criticised

The National Association of Radio Communication Services, which includes most UK message-handling companies, has strongly criticised the Post Office's monopoly powers. It proposes that the UK's overall regulatory authority should be transferred from the Post Office to the Department of Industry and that the Radio Regulatory Department should be transferred from the Home Office to a new separate commission. This commission would allocate frequencies, and regulate their use, to both the Home Office (and other government agencies) and private users.

ABU: New President

P.C. Chatterjee, Director-General, All India Radio, was elected president of the Asia-Pacific Broadcasting Union (ABU) at its 14th Assembly held on 28 October – 1 November at Cesmé, Turkey.

Italy: Free Radio

RAI's own surveys suggest the corporation has lost about 20% of its radio audiences to the 'free' radio stations. At night, the loss doubles, with the 'free' stations having almost as large an audience as RAI.

Australian Satellite?

A task-force into the costs and benefits of a domestic satellite system has been set up by the Australian Minister for Posts and Telecommunication. The task force will analyse a proposal presented by Australian Consolidated Press Ltd (licensees of TCN-9 TV station in Sydney and GTV-9) for a domestic system.

New Asian Institute

The Asian Institute for Broadcasting Development added 'Pacific' to its title and was formally established as an intergovernmental entity at a meeting held at the AIBD, Kuala Lumpur, on 10-12 August. The meeting also elected a governing council comprising Bangladesh, India, Indonesia, Iran (Vice-Chairman), Malaysia (Chairman), Pakistan, Papua New Guinea, Philippines, Sri Lanka and Thailand. The intergovernmental meeting was convened by the United Nations Development Programme with the cooperation of UNESCO. The director of AIBD is R Balakrishnan.

An article on the AIBD was published in InterMedia, Vol 4, No 2.

☐Netherlands: Teletext

The Dutch Minister of Cultural Affairs has indicated that a Dutch teletext system would be regarded as being covered by the existing Broadcast Act and therefore as a matter for broadcasters. He was replying to letters from the Netherlands Press Society who argued that teletext was a matter for the press, and from the broadcasters, who supported the existing Act. There are no plans so far for the introduction of teletext, even on an experimental basis.

☐US Children's Endowment?

A National Council for Children and Television has been proposed by the Centre for Action Research in Princeton, USA. The Centre was commissioned by the Markle Foundation to ascertain the feasibility of setting up something rather larger, a National Endowment for Children's Broadcasting, along the same lines as the National Endowment for the Arts and the National Endowment for the Humanities. A major objective of the study was to analyse ways of providing good TV/radio programmes to a group – children – who were especially vulnerable and, in terms of consumer power, insignificant.

The Centre's study concluded that an endowment providing education, training and some production was not feasible for a variety of economic and federal political reasons. However, it suggested legislation for an Endowment should be introduced in order to publicise in Congress and the country the urgent importance of the issue. It also proposed the establishment of a National Council for Children and Television to maintain the public debate and to act as a pressure group for children. New technologies of distribution were mentioned as a possibly significant opportunity for alternative children's programming.

The report 'Towards a National Endowment for the Art' is available from Centre for Action Research, 20 Nassau Street, Suite 211, Princeton, New Jersey 08540

☐Satellite Paging

A paging system based on a satellite has been started by the US Radiofone Corporation. It uses a Western Union satellite and city-based Earth stations to provide paging in New York, Chicago and Los Angeles. Rental is $31.50 a month.

Briefly/ Meetings

☆ Equipment and Systems

A conference and exhibition on communications equipment and systems, Communications 78, will be held on 4–7 April 1978 at the National Exhibition Centre, Birmingham, UK. Its themes are PTT Telecommunications; Fixed and Mobile Radio Communications; Defense Communications. The organisers are the Institution of Electrical Engineers, Savoy Place, London WC2.

☆ Prix Jeunesse

The 8th Prix Jeunesse will be held on 26 May-3 June 1978 at the headquarters of Bayerischer Rundfunk, Munich, one of the nine State broadcasting organisations of Germany (FR). The Prix Jeunesse is an international television contest for children's and youth programmes held every two years. Originally established by the Free State of Bavaria, the City of Munich and Bayerischer Rundfunk (ZDF joined later), it is now held under the auspices of the European Broadcasting Union and UNESCO. Further details from Ernst Emrich, Bayerischer Rundfunk, Rundfunkplatz 1, D 8000 Munchen 2.

☆ Mass Communication Research

The Eleventh Congress of the International Association of Mass Communication Research will be held on 4-9 September 1978 in Warsaw. Inquiries should be sent to James Halloran, Centre for Mass Communication Research, 144 Regent Road, Leicester.

☆ Computer Communication

The fourth International Conference on Computer Communication (ICCC) will be held on 26-29 September 1978 in Kyoto, Japan. It will cover multinational, multidisciplinary, technological, economic, legal and social aspects of computer communications. Inquiries and papers should be sent to the Executive Committee. ICCC-78, International Affairs Bureau, Nippon Telegraph & Telephone Corporation (NTT), Musashimo-shi, Tokyo 180, Japan.

☆ Spectrum Management

A seminar on frequency management and the use of the spectrum will be held on 9-20 October 1978 at the headquarters of the International Telecommunication Union in Geneva. It will be organised by the ITU's International Frequency Registration Board, which has held similar seminars every few years since 1963. In 1978, the seminar will discuss the IFRB's work and, in particular, the decisions of the 1975 Regional Administrative Conference for LF/MF Broadcasting (Regions 1 and 3); the 1977 World Administrative Radio Conference for the planning of the Broadcasting Satellite service in the 12 GHz band; and the 1978 WARC on the aeronautical mobile (R) service. Details from IFRB, ITU, Place des Nations, CH-1211 Geneva.

☆ Telecom 79

Telecom 79 will be held on 20-26 September 1979 at the Palais des Expositions, Geneva, under the auspices of the International Telecommunication Union. Telecom 79 follows similar events in 1971 and 1975 and will probably be the largest-ever international telecommunications event. It will comprise (1) an exhibition of equipment, services, etc; (2) the first world book fair on telecommunications and electronics; (3) the third World Telecommunications Forum; (4) the Golden Antenna 1979 award and the third international festival of telecommunication and electronic films and (5) the third 'Youth in the Electronic Age' competition. The events are timed to coincide with the World Administrative Radio Conference which opens in Geneva on Monday 24 September, and with a Regional Administrative Conference for LF/MF Broadcasting (regions I and III) which is planned to take place at the same time.

The World Telecommunications Forum consists of two parts: plenary meetings on the political, economic and financial aspects of telecommunications (20-22 September) under the sponsorship of the ITU; and a Technical Symposium (23-26 September) under the joint sponsorship of the ITU and other organisations.

Inquiries for all events should be sent to R Fontaine, Commissaire General, Telecom 79, Orgexpo, 18 Que Ernest-Ansermet, CH-1211 Geneva 4.

TCDC: A Challenge to Communicators

A message from Bradford Morse, Secretary General of the United Nations Conference on Technical Cooperation among Developing Countries. Mr. Morse is also the Administrator of the United Nations Development Programme.

I very much appreciate this opportunity to reach the worldwide community of officials and specialists in human communication and information media with a few words about a conference that has communication needs written into every line of its agenda.

The 1978 United Nations Conference on Technical Cooperation among Developing Countries is essentially about re-opening ancient lines of contact, and building entirely new bridges, across the whole Southern world of the developing countries.

No one is suggesting that the last quarter century of experience of a predominantly North-South flow of technical cooperation has been uniformly negative. But it is now far more clearly perceived – and not least by Northern development thinkers – that the models that have been available through those North-South channels have sometimes been inappropriate for developing countries; and that, in other instances, the countries have lacked the capacity to choose more discriminately and to adapt more carefully to their own value-systems and development needs.

Without any doubt, one of the reasons for these difficulties has been that the developing countries have not been sufficiently able to consult each other, share in their collectively enormous body of experience in development, and draw upon each other's accumulating skills.

Equally, because of the lack of South-South communication for development, there has been largely missing to date one of the most priceless ingredients of genuine innovation and advance – the building of entirely new knowledge from the pooling of common experiences.

In the United Nations Development Programme we are intensely aware of a phenomenon that is seldom reported in the North – the daily working effort of tens of thousands of people in some 150 developing countries and territories to find practical answers to problems of poverty, of deprivation, in every facet of the human condition.

Never before in human history have so many people, in so many fields, been engaged in so intensive and unrelenting a struggle against so many common obstacles.

Priceless experience and insight is being generated every day, all across the Southern world, by this vast human endeavour. Yet to date, these thousands upon thousands of "experiences" have been largely isolated from each other. If we can make connections between them, it is difficult to overestimate the accelerated advances of development that might be unleashed.

Readers of this journal, in particular, can immediately perceive how heavily these needed new South-South cooperation processes will depend upon the skills and resources of the communication and information professions and media. From the promotion of the spirit of self-reliance, to the more technical aspects of re-writing (or completing) the communication map of the world, to new ways of "connecting" Southern knowledge in daily development work, the challenges to *you* are the first and primary.

I pose them to you all with urgency. You can help to make next year's TCDC conference a decisive milestone in the search for a more just and equitable world. I hope you will join us in this endeavour.

UN, TCDC, BA, 1978:

The United Nations Conference on Technical Cooperation among Developing Countries (TCDC) will be held in Buenos Aires in 1978 – probably in September. Since 1976 the Conference Secretariat has been defining the policy issues. It has held four regional meetings. The fourth meeting was held at Kuwait and produced the Kuwait Declaration.

This Declaration has come close to being a TCDC 'Manifesto'. It opens by saying that "TCDC is a historical imperative brought about by the need for a new international order. It is a conscious, systematic and politically motivated process developed to create a framework of multiple links between developing countries". And it ends by saying: "The TCDC Conference should be seen as an opportunity for the world community to help release the latent creativity of two billion people, thus opening new horizons for mankind".

The second major strand of TCDC activity is the launching of regional projects and collaboration. The Organisation of Petroleum Exporting Countries will give $12.7 million to finance four regional projects involving 30 developing

continued on page 14.

TCDC:
Facing the Challenge of Contact Deprivation

Erskine Childers, Director of Information, UNDP

"TCDC is a conscious, systematic and politically motivated process developed to create a framework of multiple links between developing countries . . . an opportunity for the world community to help release the latent creativity of two billion people, thus opening new horizons for humankind." Kuwait Declaration, 1977.

THE PAGES of 'InterMedia' increasingly reflect an awareness of History in Communication, and Communication in History; and of the responsibilities of our metiers and media in both. Like that wandering minstrel of Academia, Geography – whose role in History no-one else for so long wanted to hear about – so we are beginning to come into our own, and to ask to sit in the Faculty Rooms and Planning Offices with other disciplines connected with the shaping of human society and the management of a planet which our technologies have helped to shrink so exponentially.

We now face the last basic challenge in that planet-shrinking process – the challenge of the dis-connected South. The first ever United Nations World Conference devoted entirely to the subject of South-South technical co-operation for development is thus a landmark for Communication and Information workers. Those of us who are charged with the information-support programme to prepare for that Conference – and to prepare recommendations for the long-term post-Conference Information-Education effort that TCDC requires – are both inspired and awed by the dimensions of this challenge. For this is not "Conference PR" (Nor, by the way, "United Nations PR").

At its largest dimension, it involves the question, how communication skills and media can be employed to promote the concept and practices of national and collective self-reliance among some two billion people across the developing South. At other dimensions, virtually every facet, discipline, and technique of Human Communication and Information Science needs to be harnessed to enhance the technical potentials of mutual development assistance among some 150 developing countries.

The Northern Distortion

On a historical map of the world's human communication flows, the advent of the northern-based empires involved an ironic distortion. The effects are still felt in the developing countries. It had been across their part of the world above all that humankind's earliest movements of scholars, engineers and other technologists, trade and financial advisers, and the first scientific texts, had moved.

The new colonial frontiers cut across and virtually closed these ancient South-South knowledge-building routes. Through the rise of imperial trade and finance, and for the mandatory transmission to the colonies of the northern empires' political, legal, economic and educational systems, entirely new lines of communication were built up – North-South. Over the same period, with the Southern world in internal communication stasis, in the North there was an exponential growth of communication until in that formerly very isolated hemisphere there had aggregated the most massive concentration of economic, technological and military knowledge and power in recorded human history, North-North.

And by the middle of the twentieth century, the educated minority of most of the entire Southern world had gone through a kind of intellectual uprooting. They had been taught to "think North and look North"; bereft of almost any contact among themselves; overwhelmingly dependent upon information and knowledge transmissions through the North-South channels, through Northern languages, and through Northern value-systems.

Pandit Nehru had described himself as a queer "mixture of East and West". At Bandung in 1955 the Non-Aligned leaders included in their Declaration a little-noticed affirmation that "the peoples of Asia and Africa are now animated by a keen and sincere desire to renew their old cultural contacts and develop new ones in the context of the modern world". A few years later, Frantz Fanon was posing the question of "the cerebral mass of all humanity, whose connexions must be increased, whose channels must be diversified, and whose messages must be re-humanised".

The twin themes of national self-reliance, and collective South-South reliance, were growing. In 1968 President Julius Nyerere urged that "We in Tanzania are a part of mankind . . . Our task is to look first at our own position and our own needs, and then consider other experience and other suggestions in the light of our requirements . . . and we should contribute to the common pool of knowledge and experience".

Mechanisms To End The Deprivation

Year by year, the sense of likely unknown options in development, the awareness of too heavy a dependence on the North-South relationship (intellectually, at least), and the frustration of accumulated contact-deprivation became more intense. By 1974, the UN General Assembly's Programme for Action for a New International Economic Order included a call for the developing countries "to promote and establish effective instruments of co-operation in the fields of industry, science and technology, transport, shipping, and mass communication

The views expressed are those of the author and not necessarily those of the United Nations, the TCDC Conference Secretariat, or the United Nations Development Programme with which he is currently associated.

media".

In 1976, the Non-Aligned Summit at Colombo declared that "the need of the hour is to develop a common will and evolve suitable mechanisms to fully utilize the complementarities, resources, and capabilities within the developing world for mutual benefit and for collective economic advancement". The "invisible" lines of enormous communication needs run through these historic texts in virtually every paragraph.

At the end of the 1976, the UN General Assembly called on UNDP to organise the first-ever full-scale UN World Conference on Technical Cooperation Among Developing Countries (TCDC), with a special request for a world-wide information effort. And in June 1977, the Conference Secretary-General, Bradford Morse, brought together in Kuwait a group of eminent development thinkers, planners, and administrators to help synthesise the objectives of the 1978 Conference. They produced the "Kuwait Declaration", yet again replete with massive implications for communication skills and media. Among many, the Declaration noted that "Education is a critical requirement for TCDC. Historical patterns of dependence have added cultural and attitudinal barriers that must be overcome for the full potential of TCDC to be realised".

Tackling these "attitudinal barriers" to greater self-reliance is in itself a momentous challenge. No one is demanding autarky of the South. There are profound sensitivities, nonetheless. On the other hand, no-one wishes to denounce all the development aid and advice that has come down the North-South channels. On the other hand, an element of critical re-examination of these North-South transmissions, and the appropriateness of the models they have involved, is not only inevitable but a necessary tool to sharpen the search for new South-South generated alternatives.

The Goddess of GNP Growth

Thus, in one of the most striking essays on the South's contact-deprivation, with the impatient title, "The Fault Is Ours", Mahbub ul-Haq of the World Bank wrote in connection with the launching of the Third World Forum: "When we embarked on our economic development, we were taught to worship the goddess of GNP growth and to chase certain per capita income targets; and when we raised questions, we were politely told that this was the essence of Western experience. We were left to discover for ourselves, through out own sad experience, that the character of growth and distribution of its benefits was as important as growth itself, and that there could be no meaningful development for the bulk of our populations unless there was a direct attack on mass poverty and the satisfaction of minimum human needs through our indigenous efforts and through our own value systems".

At the IIC's 1977 Washington Conference, Guyana's Minister Kit Nascimento delivered a paper with an equivalent analysis of North-South received communication models, and with no less emphasis on the urgency of developing countries breaking loose from wholesale importation and becoming both endogenously innovative and selective. And it is in that one word, "selective", that I believe there are vital keys for communicators and information practitioners – both at the dimension of promoting self-reliance, and at more technical levels of communication-support for TCDC.

It can be argued, I believe, that the whole ethos of development and technical co-operation over the last quarter-century has contained *a one-way, transmit-and-receive dynamic.* It came about partly because of the apparent integrity of Northern development models and packages, not only as inevitably inexperienced Northern specialist carried them thus South, but as their partners in the developing countries had (to use ul-Haq's word) been "taught" to view such models. The other crucial cause was, assuredly, the absence of horizontal, South-to-South contact through which people in developing countries could have drawn on each other's experience of such models, and built new development knowledge based on their own endogenous assessments and strengths.

And as Development Support Communcation workers have long been aware, this one-way transmit-and-receive dynamic also penetrated deep into the *internal* approaches to development planning and implementation. It travelled one-way, from "top down", from capital city to rural area, inevitably neglecting community self-mobilisation and *selection*, and that priceless dynamic of almost all innovation and growth – mutural knowledge-building.

Selection, Not Transfer

The moment one re-locates the starting-point, and uses the concept of "selection" rather than "transfer", the communication approach to building self-reliance and to evolving new techniques for technical cooperation becomes more clear, whether at the international level of TCDC, or at the internal level of development planning and action within a country. In helping to promote collective self-reliance, information programmes need to find and depict "live" examples of the process of selection by developing countries through sharing of experience, through joint innovation, and through new uses of communication in order to learn from mistakes.

The implications of these approaches for the role of communication in support of TCDC are far-reaching. Traditionally, technical co-operation has come in a fairly standard "package" consisting of one or more "experts" sent from (usually Northern) country A to Southern country B, together with training fellowships (usually in a Northern country) and equipment (usually from a Northern country). The most advanced thinking about South-South technical co-operation, however, does not assume that there is anything sacred about this traditional (and costly) project format which, among other things, places an almost inherently impossible reliance and dependence upon what the expert *brings* in his or her brain and memory *to* the developing country, and of course on how well he/she can communicate this *to* the so-called "counterparts".

While not abandoning the "expert" concept, TCDC thinkers are fully aware that the mere substitution of this kind of "expert" and package from a developing country rather than from a Northern country will not necessarily improve the development process, or promote and accelerate self-reliance. For one thing alone, the available expert from a developing country may well be what ul-Haq called a "prisoner of our own past training and somebody else's thought". Inappropriate, or non-selective models and techniques, could all too easily be transmitted South to South "off" the results of

earlier North-South transmissions.

The challenge, then, is to open up the whole process in a search for entirely fresh, and possibly more cost effective, means of moving – yes, communicating – technical information, experience and innovative ideas *back and forth* among developing countries, continuously, creatively, and in ways that result in the building of new knowledge. We are all as yet groping for ideas and novel techniques to achieve this new kind of development co-operation, and I dare to hope that the vast, worldwide intellectual and technological resource-network that is in fact the readership of this journal can mightily help in this search. Here, I would offer just a few opening thoughts to provoke such help.

Six Themes

One. If we look at the 1977 map of South-South contact-deprivation, we see at last major strides forward, across the South, in telecommunications networks. PANAFTEL, for example, represents a dramatic breaking of the great silence in intra-African communication that had settled over the continent. These new horizontal telecommunication links face myriad demands on their capacities.

Amongst all these, how can the partner countries establish live, ongoing, readily available systems whereby practical development workers can – literally – talk with each other upon need? This does *not* mean inexorably having to go through the process of recruiting one as an "expert", to be physically shipped to another country and posted there, but means engaging in electronic conferencing. The techniques are known, although not in terms of the efficient use of the medium for *operational development* conferencing which will take serious research and development and then training. It will also, of course, require policy decisions as regards priority-use, and cost-remission.

Two. For these and many other new techniques, an absolutely minimum requirement is resource- and experience-identification and registration. To promote TCDC, UNDP has set up an Information Referral and Exchange System (INRES), computer-banked, in which developing countries are rapidly registering their specific and available resources for TCDC in consultancy work, research, training, and other elements.

Many elaborations on this will be needed, and not least for the kind of "from-site" communication suggested above. It is importance to bear in mind that, for a significant proportion of experience-assembling and option or technique-selecting needs in development work, the "micro" dimension is especially ill-served at present.

In one province in an Asian country, for example, an young development engineer is trying to build an irrigation and potable water system using only hollowed-out bamboo and village self-help labour. The potential is enormous: in that province alone, if it works, and keeps working, tens of thousands of people could benefit in health and nutrition and irrigated agriculture productivity.

As things now stand, however, that young engineer in that remote province has little chance of seeking and obtaining the benefit of experience with bamboo-pipe water systems which are in fact in operation in dozens of equally remote and city-unknown places all across the Southern world. Ironically, some of this aggregate information is probably "held" (not in any pejorative sense) somewhere in the North, because Northerners have the money to travel, investigate, and write up such things – but in costly Northern journals which that provincial worker (and his unknown co-workers elsewhere in the South) can never hope to read, and wouldn't have the money to buy if they even knew of it.

What communication techniques and materials – as directly South-South, as economical, and as appropriate in content and *perspective* as possible – can be devised to open up alive and ongoing new "networks" for these vitally important micro-TCDC needs?

Costly Subscriptions, Fares, Fees

Three. I emphasise "networking" because I believe it is within this concept that some quantum advances might be possible. Networking makes selection possible – selection not from one other source, but from as many alternative sources and sites of practical development experience as can be found and linked-in. Networking also *builds new knowledge* – and as the Kuwait Declaration succinctly pointed out, "there are areas and subjects in which relevant technical co-operation can only stem from other developing countries; the problems involved do not exist in industrialised countries nor do they dispose of the technical tools to tackle them". (Anti-poverty mass rural development, is an example).

The equivalent networking takes place in the rich Northern world through a whole panoply of communication media and techniques – from extremely costly multiple subscriptions to technical journals, through also very costly professional and technological annual conventions and exchanges of learned papers, through individual specialist travel at the blink of an eye, to computer networks and conferencing, university and institute and foundation fellowships and associate-ships, and so on. Can Communication and Information Science find significant, low-cost innovations and breakthroughs to begin to develop networking systems *directly* between and among developing countries whose equivalent personnel simply cannot command the North's scale of budgetary investment in its kinds of networks?

Four. The "direct", South-to-South, factor is probably another top criterion. In seeking out new ways to advance TCDC, great caution should be exercised over any assumption that many problems could be solved by, as it were, subsidies South-to-South linking into and through Northern knowledge-chains and information systems. Northerners need to recognise the existence of different value-systems, different logical constructs, even different premises as to what constitutes "valid documentation" (ie, the Northern criterion that a technical paper is not acceptable unless it quotes and footnotes every authority-source anyone ever heard of, uses almost stupefyingly incestuous jargon, and is at least a quarter-inch thick as a result, is not held by everyone, by any means). These and many other "filters" do not help TCDC at all.

No Time to Write a Paper

Nor, I would plead, and I believe Southern friends will agree, should very much promise be lodged in ideas of increasing Northern-funded participation of Southern development workers in Northern-organised meetings, seminars, symposia, workshops, and all the rest. There is an element of value in

these, of course. But there are inherent difficulties of much the same kind, unless it is straight Northern financial help for gatherings among Southern development professionals and technicians, in the South, *with the participation and the agenda and the resource-persons and the papers prescribed by Southerners, and with Northern participation sternly limited.* In daring to advance this, no offence is intended and I urge none should be taken.

It is, again, quite simply, that the entire starting-points are so often different. For example, it is *not* a universal and omni-culturally accepted premise that a gathering of people must, for its very justification, feature lengthy papers *read at* participants. Very few Southern development workers have the time to write such papers. Nor is it a universal premise that every meeting should have an agenda constructed on the assumption that there must, whatever it takes, be an "action-oriented set of recommendations" in a report, the very writing of which usually exhausts a large chunk of the meeting time.

Five. These cautions relate especially to a major component of TCDC processes which we are increasingly convinced will prove critically important; that is, building stronger linkages and networks among professional, technical and voluntary associations of development workers in the South. These range from planning and training and research institutes to associations of consulting engineers and other technologists, and many other little-known pools of development workers. 'InterMedia' colleagues will quickly perceive that these professional, technical and voluntary associations (in the jargon, PVTAs) are themselves vital potential communicators and transmitters/exchangers/assemblers of development experience and technical information. Many have very circumscribed budgets, and contact among them is constrained across the South. How can they be helped to communicate with each other, more frequently, more intensively, at the lowest possible cost, in the search for new Southern-endogenous development knowledge?

Six. Last but in no way least, running like a still largely underground stream through all these communication challenges from the movement for TCDC, there is the question of the role of organised technical information media – press and publishing, radio, film, other audio-visual media, and television. The decisive advent of TCDC on to the world's development agenda in next year's Buenos Aires Conference and beyond links directly into the lively discussion of a new international information order, and needed new South-South information systems, which has been a continuous dialogue within the pages of 'InterMedia'.

The Media Can Make or Break

If once hearts and minds are galvanised by the historic dimensions and the importance of TCDC as a major new dimension of development co-operation, the potential for the media within and between Southern countries is of course enormous. For the information-support necessary to prepare for the 1978 Conference alone, their role is almost make-or-break.

There is an immediate, urgent need for ministries of information and of broadcasting, and national private-sector media, to promote this new awareness of self-reliance as a dynamic factor in the very process of national development. There is a need for reportage, discussion and lively debate within developing countries on the whole historical background to TCDC, on their present and potential needs for mutual development, and on practical "case studies" where such South-South co-operation is working. And on why it is working, and, if not, why not, so that lessons can be learned. Above all, at the largest dimensions of human communication, there is a need to pose the significance of a Southern world at last restoring its ancient horizontal contacts.

In that extraordinary set of essays, 'The Wretched of the Earth', published in 1961, Frantz Fanon wrote a few lines which captured the sense of contact-deprivation, of circuits too closed, and of that "intellectual liberation" of the South that is perhaps a mainspring and motive force behind the movement for TCDC. In it, he looked, as well, to the day when once "the connexions" had been increased and the channels more diversified, a truly global partnership for development, on terms of equity and mutual respect because the whole world is searching for models, would begin to come about.

His words stand well for communicators today: "No, we do not want to catch up with anyone. What we want to do is to go forward all the time, night and day, in the company of Man, in the company of all peoples. The caravan should not be too stretched out, for in that case each line will hardly see those who preceded; and people who no longer recognise each other meet less and less together, and talk to each other less and less . . ."

The means do exist to help end that great silence that fell across the Southern world, and to build new and dynamic, development-supporting bridges across it. As communicators, we need only the will, and the application of our ingenuity and technologies, so that people can talk more and more to each other, and that so vast a resource of creativity as two billions among humankind can come back into their own.

---

continued from page 10.

countries (with a possibility of another $7.3 million to come). African Heads of State and Government pledged support for TCDC at a meeting in Gabon in July. They called for the "vigorous" support of the policy of self-reliance among developing nations and of current UNDP efforts to "institutionalise TCDC activities in the context of restructuring the United Nations development system."

Bradford Morse, the Secretary General of the TCDC Conference (as well as the Administrator of UNDP) has stressed the "vital contribution to TCDC which professional, technical and voluntary associations (PTVAs) must make, not only at the more technical level but in terms of the intellectual resources they can offer to policy formulation". Mr Morse is keen that although the UN TCDC Conference is an intergovernmental meeting, PVTAs will be enabled to participate and make an "active contribution".

Readers interested in further information about the Conference and TCDC should write to the Secretariat, UN Conference on TCDC, United Nations, UN Plaza, New York 10017. Two basic documents are 'The Kuwait Declaration' (Ref: A/CONF. 79/PC/18) and 'Technical Cooperation Among Developing Countries as a New Dimension of International Cooperation for Development' (Ref: A/CONF. 79/PC/121).

Information, Growth and Economic Crisis

Jean Voge, Ingénieur General des Télécommunications, PTT, France

"Thermodynamics grew out of a study made by the French engineer Sadi Carnot in 1824 in which he examined, for the first time, the economics of heat engines. Thermodynamics began as the physics of economic values, and so it has remained, despite numerous contributions since then of a more abstract nature" N. Georgescu-Roegen (1970)

THE PRODUCTION and dissemination of information is the major activity in today's advanced industrial economies. As Peter Drucker (1) pointed out a few years ago, in these countries information represents the chief expense, investment, product and means of existence for the majority of the population.

In a book published in 1962, Fritz Machlup split economic production into two parts: the physical, or material, and information or knowledge. He showed (2,3) that in the United States the information quantum (ie, the proportion of information in the added value of the gross national product, or the percentage of information producers and disseminators within the work force) reached about 10% in 1900, 30% in 1960 and 40% in 1970. Marc Porat substantially developed this line of research in his thesis (4) submitted to Stanford University in August 1976. On the whole, Porat confirmed Machlup's assessments. He showed that since 1960 the trend has been towards 50%, which represents saturation level.

The concept of saturation had already been acknowledged in scientific research (since 1965), education (since 1970) and communications. The data, as yet only provisional, assembled in 1977 (5) by a team from the Organisation for Economic Co-operation and Development, reveal a comparable growth in Great Britain, France and Germany (FR). In 1970 these countries lagged behind the USA by five to ten years, with information sectors of 32% to 36%.

Changing to an Information Society

These modern societies are changing into societies of "knowledge", of "information", in which one worker out of two earns his living by handling facts and figures rather than by the manufacture or supply of goods and physical services.

It is difficult to define the borderline between information and the physical or material. Machlup was led to classify physicians and surgeons respectively as intellectual and manual (practical) workers.

The two fields are almost always linked. One cannot do anything with physical objects without knowledge, or without using tools that are themselves the results of knowledge; conversely, the processing and production of data, of knowledge, requires material tools.

To get better categories, Marc Porat carefully analysed statistics of US manpower and financial accounting. He divided information into two relatively separate sectors, which he described as primary and secondary. The *primary* sector includes organisations and companies which make or use information processing equipment in the widest sense of the term (systems of measurement, office equipment, calculators, all kinds of media including advertising, etc) and those service organisations whose main goal is to supply and process trade information. This first sector embraces education research and development, legal and management consultancies, engineering, architecture, accountancy and certain banking and commercial services (deposits, management of a deceased's estate), brokers and foreign exchange dealers, insurance, travel and estate agents and other kinds of agents and dealers.

The *secondary* sector groups together the "information" activities of companies chiefly concerned with the output of material things. It includes planning, marketing, study and research, and professional training organisations. He characterised these activities as the organisation's bureaucracy. These private bureaucracies are supplemented by the public bureaucracy which, on a national and local level, encompasses a similarly numerous and varied range of informational activities (excepting those organisations which should be included in the primary sector such as education or telecommunications).

Porat discovered that "bureaucracy" comprised almost half the whole field of information. It will therefore soon account for a quarter of all economic activity. Although indispensable, it is not in itself productive and so constitutes a heavy burden on society's wealth, and on national budgets. But trade information itself is usually an interim product. Its real value is reached only when it is injected into the sphere of physical production – either on a human level (training, advice) or on a plant and machinery level (research, engineering).

Growth, Maturity and Economic Crisis

Working from these results and observations, we can start to tackle the correlations that exist between general economic growth and the much faster proliferation of information and bureaucracy; or, in more general terms, between the rates of growth in the two complementary fields of information and physical production. Marc Porat (4) has made a detailed study using Leontief's input-output matrices. A few years ago I embarked on a more global approach (6, 7).

If we take just the main elements of the American data (which I have already examined in detail elsewhere 7, 8), we discover a striking parallel between the growth of productivity (per worker or working hour) and the growth of the economy's information activities or quantum as defined above. Between 1900 and 1970 productivity in the USA increased almost fourfold; so did the information

quantum. Evidence of this fourfold yield can be found throughout the entire field of information.

Education is a good example. Human investment in education plays a similar role in information as does technical investment in the production of material objects. And education represented more than 7% of the GNP in 1970 as against less than 2% at the beginning of the century. Similarly, managerial staff, the liberal professions, office workers, and other white-collar workers, accounted for about 30% of the work force in 1970, as against 7.5% in 1900 (8).

A correlation of this kind implies that the information sector is growing twice as fast as the economy as a whole. In 1970, the information played a role four times larger than in 1900 in an economy whose productivity (per worker) was itself multiplied by four. At the same time, it is clear that the rate of growth in the material sector has been progressively slowing down. The decrease follows a law of variation.[1]

This law imposes an upper limit on physical production per worker when global production is composed equally of real output and information. At this point, the information quantum which is proportional to production (for a fixed number of workers) reaches 50%. This 50% level corresponds to a certain maximum level of "maturity" of economic growth.

This balance depends on two factors. If the 50% level is exceeded, output and material wealth per unit of working population must decline, despite the greater output of information. The increase in productivity amongst workers on the shop floor, due to better equipment and know-how, can no longer compensate for the steady loss of manpower to the bureaucracy.

This phenomenon of the critical 50% level led me in two 1973 publications (6, 7) "to fear in the near future a noticeable slowing down (if not a sudden halt) in the expansion of the richest and most highly industrialised societies".

It also made me suspect that the present crises of inflation, even stagflation, and unemployment (not forgetting the energy crisis, which has speeded the process) might actually be "an adolescent crisis between a growth which is beginning to flag and a maturity that is not yet recognised as such"

A more detailed analysis (9, annexe 3) of this hypothesis suggests only one possible solution: that is, an acceptance of maturity, with all its consequences of a slowing down and finally a halt in the wage-earner's powers, in the level of investment, and in productivity or average output per worker.

This analysis follows one of my previous studies (7) on the role that information plays in the production functions used in theories of economic growth. One can distinguish between the information that is integrated, used, in production plant and machinery, and that used directly by the workers. With this criterion, I was able to establish a modified version of the Cobb-Douglas function which treats technical capital and human capital in exactly the same way.

Using this model has proved of great value in deepening the relationship between capital and work, and between energy and information. It has also proved valuable in adapting the principles of classical economics to the slower "new growth" conditions of information societies.

Linking Economics and Biology

It is obviously dangerous to draw categorical conclusions of this kind from data that relates almost exclusively to the American economy. We must be cautious. But support for the thesis can be found elsewhere – in areas of study and science that are normally held separate.

There is a similarity between the US data and several facts observed in the growth of a great many physical and even biological systems which are governed by the basic principles of thermodynamics.

Charles Shannon and L. Brillouin have shown that there is a very close relationship between information and entropy, suggesting a similar sort of growth.

Entropy may be taken as a system's natural process towards increasing instability, towards a lack of organisation and structure, a lack of order. In thermodynamics, it is the increasing unavailability of the system's energy that can be used for work. The presence of usable energy (including, in this sense, usable information) slows this natural process of decline and may cause negative entropy, or a more much greater coherence and order.

In an active thermodynamic system, the energy that is lost by entropy (eg, in a wasted heat flow) must be compensated for by a continuous supply of energy that is coherent and organised and that feeds information (or negative entropy) into the system. This energy or information is accompanied by what engineers call "noise" (collisions, frictions, interference etc.) which is a concomitant part of the usable energy but which is unwanted.

In the same way the piston of an engine can be seen as guided by information which emanates from the energy that is lost by friction as it grinds against the cylinder that surrounds it. And a car driver is guided by the solar energy which illuminates not only other cars and the parts of the road that he needs to see but vast quantities of other facts, data, that he does not need.

If the flow of information that drives a society's economy is doubled, in order to double productivity (7, 8), then the volume of surrounding information will also be doubled. It is this information that determines the total level of interference. The information is useful for some, but irrelevant to others, or even, in some senses, polluting.

Communications specialists know that, in this context, the power required to transmit information correctly will be quadrupled.

The same is true in thermodynamics. The price that must

---

[1] This law states $P = Fi - Ri^2$. P is taken to stand for production (of things material), F for the number of workers, and i equals average productivity per worker. The term Ri^2 represents the production of information within a total production $W = Fi$.

This formula can be used in thermodynamics (see next page). F signifies the potential to which the system is subjected (eg, an electric current; the distance traveled by a fall of water); i is the flow of current passing through the system; and R measures internal resistance. Thus Ri^2 corresponds to the power which is irreversibly dispersed by the system's entropy flow in such a way that the increase in usable power, P, given up in the form of work or physical production, reaches its maximum when dispersion is half the power consumed, $W = Fi$. Joël de Rosnay (11) mentions this law of "50% yield" and gives several examples of its application. In (12), H.T. Odum and R.C. Pinkerton have demonstrated it in a more general way.

be paid for information – in energy consumed or in the human costs of production – is linked to the level of interference.

All these studies suggest that labour productivity, as in the past, may follow a parallel course to the information quantum – right up to the point of saturation. There would be delays, however, over a few years or even a decade or more, because of the time lag which exists between informational activities, such as education and research, and the economic consequences in the material sphere.

Cellular Structure and Decentralisation

We have already indicated why one should be wary of the traditional predictions of short-term stagnation, or zero growth, in industrial economies. According to these hypotheses, the authorities reponsible would have to set in motion machinery that was perfectly regulated if they were to halt the inexorable disintegration of living organisms that have reached maturity.

The real solution to this problem is to be found in the facts of evolution (exactly as in the science of biology). We must look at those profound and discontinuous changes that, unlike simple linear growth, can generate an evolutionary progression and even metamorphosis.

Thermodynamics has taught us a great deal about systems that are made up of a great many particles, including the interaction of different elements. It has enabled us to understand the principles and essential techniques which determine these kinds of changes in structure.

A system uses only a proportion of the total energy it consumes. At a rather weak level of power, the system's structure is akin to a state of equilibrium. This equilibrium is what that system would attain if left to itself in isolation from its environment – say, within an isothermic enclosure so there is no transfer of energy, or heat. At this point the system is subject to the laws of linear thermodynamics of irreversible processes. If there is an increase in power, and the system moves away from equilibrium, non-linearities could lead to the system evolving spontaneously towards new structures. I Prigogine and his team at the Free University of Brussells (15) have described these new structures as "dissipatory" ("dissipative"). They exist only in a system of dynamic stability – not a static one like structures of equilibrium – in which there is a constant consumption and dissipation of power. Thus entropic dissipation consists of two distinct states: structural and functional.

These dissipatory structures can take a variety of forms, reflecting the hazardous, unstable circumstances that precede their appearance. Their complexity and the degree of interior organisation tends to increase simultaneously with structural dissipation; as already discussed, this implies a continuous supply of information. The fact that dissipatory structures are better organised than structures of equilibrium means that they can be more productive. The added power and information which they consume are more than compensated for by their productivity gains in the functional sphere.

A classic example of evolution and dissipatory structure can be seen in hydrodynamics. If one increases the power carried by a liquid or gaseous fluid, a metamorphosis takes place. Above a certain speed the discharge which started by flowing in thin separable, laminer layers – ie, unstructured, neither homogeneous nor regular, with parallel trickles of current – becomes unstable. At this stage a new structure, made up of turbulent swirling cells, will appear. The change occurs more or less rapidly depending upon several conditions or constraints which can prolong the laminar stage in a metastable state.

In the same way, a layer of homogenous liquid, when heated from underneath, will organise itself into a regular order of hexagonal cells (15).

Biologists are another group of scientists who have investigated dissipatory structures. They have used them to explain both evolution on a molecular level and, at an even earlier stage, the emergence of order at the very beginnings of life (15, 16). The Nobel prize-winner M. Eigen (17, 18), has shown that the interaction of proteins and polynuclear substances – respectively, a cell's building materials and information vehicles – leads spontaneously to a final state, self-organised but very stable, that corresponds to a genetic code.

Dissipatory structures can also be created, or stimulated, artificially. A refrigeration unit, instead of increasing energy output, could progressively lower the temperature of a supposedly-gaseous physical system to its original ambient temperature. Changes in structure will occur and the material will change from its gaseous state to a liquid state, a solid state; and, eventually, from a crystalline structure to a different one. These changes will occur as the internal (electric) resistance becomes smaller and smaller. The organisation of the environment will evolve in a discontinuous way from a lack of structure to greater tha greater structure, or order. In other words, the power that is consumed is used to pump heat, and therefore entropy, out of the system. The result is greater order.

Roads and Telephones

Another example is urban traffic control. Traffic lights placed at crossroads increase safety but at the cost of slowing down minor traffic flows, and wasting energy. But in heavy traffic, the lights can considerably extend the limits of saturation by organising the chaotic traffic flows into small, coherent groups.

A final example, which brings us back to the subject of communications, concerns the optimum structure of telephone networks. If we wanted to ensure direct connections between N number of users, amounting to 400 million throughout the world (10 million of whom are in France), the number of lines required would be astronomical – say, N^2. Luckily we can revert to a more realistic scale by using switching centres (ie, telephone exchanges) that will ensure that all connections can be made. But the number of connections which an exchange must have at its disposal to link n number of callers is itself of the order of n^2 (with a single, global, exchange this number remains in the order of N^2).

The optimum economy structure is one in which the network users are spread over primary exchanges with an inflow capacity of $\sqrt{N}$ (19, 20) and interconnected by secondary exchanges where number and capacity are of the same order. The total number of connections made by such a network increases as $N\sqrt{N}$, instead of N^2. This figure is linked to the fact that the total interference on a single call

that is due to interaction between circuits going through the same telephone exchange increases as $\sqrt{N}$ instead of N. This relationship clearly shows the significance of cellular structures.

These examples provide evidence of the cellular make-up of dissipatory structures. As Prigogine has shown, they are all characterised by a certain spatial, or spatio-temporal, periodicity, which implies a lack of hierarchy and a tendency towards egalitarianism.

In terms of socio-economic systems, however, there has been a contrary, but ever-increasing, move in most countries, including the most liberal like the USA, towards uniformity, towards hardening centralisation.

The centralisation of power and decision-making within the hands of a privileged elite can be seen in most countries' authoritarian handling of planning and controls, and in institutions and companies who are continually expanding and diversifying. This same trend can be seen in bureaucracy and technocracy. Both rely on hierarchies and tight-knot social classes, with little change of vertical mobility.

The mass media, and the various systems of information processing, consciously or unconsciously, have been supporting this policy. This is why the telephone network has not evolved according to the ideal of fundamentally non-hierarchical units that was described above.

On the contrary, networks have almost always developed in a "star" form, based on a fragmented hierarchy centered on the capital or a few major cities (like the railway system).

An extreme case is the media that have the largest audiences, radio and television, which have usually become state monopolies with strictly centralised control. More recently, a small number of very large computers working on a national scale or on level with the big corporations have taken the lion's share of the storing and processing of all kinds of data.

The tendency towards centralisation even crosses national boundaries. The major international satellite system, Intelsat's commercial service, connects about one hundred countries.

This strict centralisation, together with the coordination of individual activities, is analogous to the regular laminar discharge which I talked about earlier. The hydrodynamic model suggests, however, that beyond a certain level of development and economic power, a new kind of evolution will begin, and eventually the traditional structures will evolve into a cellular kind of decentralised structure.

The traditional structure will doubtless be prolonged in a metastable state by the weight of social customs and the reactions of the governing classes.

Information and Instability

In his recent study on structural evolution in modern societies Yona Friedman (21) stressed the role of information and communications. For him the instability thresholds have already been crossed in industrial countries and large built-up areas. Evolution, if it is to be appropriate, should lead in a different direction – to greater fragmentation, to increased diversification, to small communities of limited size in a specific place (urban villages) or even geographically dispersed.

These communities would be mostly autonomous. Individual movements between them would be allowed, but each community would cut contact and exchange down to the minimum within the boundaries of the central service – no longer a central power – that would provide roads and communications. The basic structural framework would operate on two levels: within a community; and between different communities.

This new kind or organisation would be more confederal than federal. It would correspond to a higher level of the economy. At the extreme, it would unite information producers and consumers. It would ensure better planning and greater protection within each community against both internal disruption and interference from outside.

Exchanges between communities could take place without any hindrance, in the same way as the membrane of a biological cell can be permeated, and multiple stages crossed by a single telephone call. This freedom would enable invention, innovation and other cultural values to spread while, at the same time, raising a barrier against "noisy" interference and pollution. Conditions would thus be favourable for the birth of a new and greater prosperity.

In the USA research based on thermodynamics has already been carried out to improve the usable yield of energy sources, and to reduce the thermal pollution of lakes and rivers. This research has led to suggestions for cellular groupings assembled by locating industrial and even residential areas around "energy centres", both existing and proposed. It is N. Georgescu-Roengen who underlines the fact (quoted at the beginning of this article) that thermodynamics constitutes the basic science of economics, not only in the realm of raw materials, plant and energy, but also on the human and information levels.

Several signs suggest, howsoever faintly, that the evolution towards a decentralised society has already started. The existing bureaucratic centralisation is challenged every day. Its opponents include not only the public but also certain governments and political parties who are encouraging or even initiating the giving of more authority and responsibility to local bodies. The principle of worker-management – or, at least, of the participation of some workers in the running of their organisations – continues to gain support at all social levels.

Unfortunately, these principles and good intentions often find themselves stuck in utopia. Although cellular organisations, with differing degrees of hierarchy, have proved their worth amongst political parties, religious orders, resistance movements, secret societies and even criminal organisations, it is difficult to imagine the exact form they could evolve into in a national context. The results, as with all kinds of evolution, are likely to depend largely on chance, and on the activities of worker-organisations, which are difficult to anticipate, or to control.

It seems to me especially encouraging that there has been a sudden change of direction in many systems of telecommunications and information processing. Centres of communications, data treatment and processing are more and more being dispersed, and dispersed without any thought of hierarchy.

From the economic and practical points of view, the initial results are so good that the trend already seems irreversible (25). For example, the low cost and high profitability of pocket calculators and microprocessors has enabled them to compete more and more successfully with the large computer. They are here to stay.

Some people see the current trends of information processing and telecommunications making a real evolution. Is this the long-awaited answer to the hopes of the past fifteen or twenty years for a more productive and less bureaucratic information technology? Perhaps. We must support decentralisation, not centralisation. In the data banks and along the transmission lines we must avoid producing information which is redundant, "noise", "interference", superfluous to the point of being pollution. Only then will we be able to reverse the current overmanning of administrative and company offices.

Infodynamics And The New Society

By way of conclusion, I think it is logical to ask for one thing. My hope is that experts in different fields may unite in an effort to combine into one completely coherent whole, not only the thermodynamic and scientific aspects of information and communications, but also their social and biological aspects. An "infodynamic" synthesis of this kind, based on the principles of thermodynamics, would make it easier to follow all the possible changes in the indivisible, triple unit, itself, as indestructible as the Holy Trinity, of energy, matter and information.

I have tried, in a modest way, to show the fundamental role that information – alongside energy, and raw materials – plays in the economy and in social structures. I can say – with caution and some reservations – that although the present crisis is in danger of turning into full-blown stagflation, or even an irreversible decline, it might provoke such disruption and reaction that another more radical evolutionary crisis is generated. This second-stage crisis could be beneficial, in many different ways.

To remind us which direction such an evolutionary step would take, we should remember Jacques de Bourbon-Busset's own conclusion in his recent article in 'Le Monde' (26): "We should never forget that tomorrow's world must on no account be a new single-unit society. The new world will be a world of micro-societies, or nothing at all." •

REFERENCES

(1) P. Drucker, *La Grande Mutation*, Les Editions d'Organisation, Paris, 1970.
(2) F. Machlup, *The Production and Distribution of Knowledge in the United States*, Princeton University Press, Princeton, NJ, 1962.
(3) F. Machlup and T. Kronwinkler, *Workers Who Produce Knowledge: A Steady Increase, 1900 to 1970*, Weltwirtschaftliches Archiv, Vol III, No 4, 1975, pp 752-759.
(4) M. Porat, *The Information Economy*, Doctoral Thesis, Institute for Communication Research, Stanford University, 1976 (a shorter version was published in *Scientific American*).
(5) *Rapports au Groupe d'Experts de l'OCDE sur l'Analyse Macroéconomique des Activités d'Information*, S. Lange and H. Remp (Germany, FR), L. Ferrandon and J.G. De C Chalvron (France) and S.D. Wall (UK), 21-22 April 1977.
(6) J. Voge, *The Economics of Vocational Training, Proceedings*, Third Annual Frontiers in Education Conference, Purdue University, April 1973, pp 241-245 (French translation, in part, *La Jaune et La Rouge*, No 282, June 1973, pp 2-10).
(7) J. Voge, *De l'Education, de la Recherche, de l'Information et des Communications dans la Croissance Economique*, Ecole Nationale Supérieure des Télécommunications, Paris, 1973-1974.
(8) J. Voge, 'Crise Economique, Production Intellectuelle et Technologies de la Connaissance', *Onde Electrique*, Vol 55, No 7, August-September 1975, pp 383-388.
(9) J. Voge, *Sur un Modèle Thermodynamique de la Croissance et de la Maturité Economique*, Ecole Nationale Supérieure des Télécommunications, Paris, 1975-1976.
(10) J. Voge, *Croissance, Evolution et Crise Economique*, presentation at a colloquy IRIS-ENST, Université Paris-Dauphine, 19 November 1976.
(11) J. De Rosnay, *Le Macroscope*, Editions du Seuil, Paris, 1975.
(12) H.T. Odum and R.C. Pinkerton, 'Time's Speed Regulator: the Optimum Efficiency for Maximum Power Output in Physical and Biological Sytems', *American Scientist*, Vol 43, 1955, pp 331-343.
(13) E. Cook, 'The Flow of Energy in an Industrial Society', *Scientific American*, Vol 224, September 1971, pp. 134-144.
(14) C. Almon, *Interindustry Forecasts of the American Economy*, (and annexe on employment 1973-1985 in figures), Lexington Books Division, D.C. Heath & Co., 1974.
(15) P. Glansdorff and I. Prigogine, *Structure, Stabilité et Fluctuations*, Masson, Paris, 1971.
(16) I. Prigogine, 'La Thermodynamique de la Vie', *La Recherche*, Vol 3, No 24, June 1972, pp 547-562.
(17) M. Elgen, 'Selforganisation of Matter and the Evolution of Biological Macro-molecules, *Naturwissenschaften*, Vol No 58, 1971, pp 465-523.
(18) M. Elgen and R. Winkler-Oswatitsch, 'The Game of Evolution', *Interdisciplinary Science Reviews*, Vol 1, No 1, March 1976, pp 19-30.
(19) P. Schneider, 'Switching Engineering of Switched Systems', Chapter 7 of *Communication System Engineering Handbook*, edited D.H. Hamsher, McGraw Hill Co., New York, 1967.
(20) H. Inose, 'Communication Networks', *Scientific American*, Vol 227, No 3, September 1972, pp 117-128.
(21) Y. Friedman, 'Utopies Réalisables', *Collection 10-18*, Paris, 1976.
(22) M.H. Ross and R.H. Williams, 'The Potential for Fuel Conservation', *Technology Review*, Vol 79, No 4, February 1977, pp 49-57.
(23) T. Alexander, 'Industry can Save Energy without Stunting its Growth', *Fortune*, May 1977, pp 186-200.
(24) N. Georgescu-Roegen, *The Entropy Law and the Economic Process*, Harvard University Press, 1971.
(25) 'Distributed Processing Data Communications', *Fortune*, March 1977, pp 31-82.
(26) J. De Bourbon Busset, 'Pour une Société de Micro-sociétés', *Le Monde*, 6-7 February 1977.

This article has been translated from **L'Information et L'Informatique dans La Croissance et dans La Crise Economique**, typescript, by Jean Voge, 29 August 1977.

Television Violence and the Adolesecent Boy

William Belson

THIS PAPER is based upon the report of an investigation into the relationship between long-term exposure to television violence and the behaviour and attitudes of adolescent boys in London. It was delivered first to the British Association for the Advancement of Science (Birmingham, September 1977) and then to the International Institute of Communications in October.

The purpose of the inquiry was to investigate hypotheses about certain of the effects of long-term exposure to television violence on adolescent boys. It was based upon a representative sample, numbering 1,565, of boys in London in the age range 13-16 years. It was funded by the Columbia Broadcasting System of the USA to the extent of $290,000 and was conducted under my direction by the Survey Research Centre, principally within the London School of Economics and Political Science.

An early by-product of the inquiry was evidence about the nature and extent of violence being committed by London boys. This evidence was presented at a British Association meeting several years ago and was widely reported by the press at that time. Since then, a major and complex process of analysis has been completed, making it possible to report on the tenability of the various hypotheses under investigation.

METHODS OF INVESTIGATION

The inquiry was conducted in two stages. In the first 14 months we concentrated upon the construction of research tools and techniques. In the second we used these tools and techniques in a social investigation based on the 1,565 boys in the sample.

Development of Tools and Techniques

The developmental phase of the work involved the construction or development of the following procedures:

1. The development of a large number of *hypotheses* about the nature of the effect on boys of exposure to television violence.
2. The construction of techniques for measuring the variables that were dealt with in the hypotheses, the principal variables being:
   - extent of personal involvement in violent behaviour;
   - extent and nature of exposure to television violence.
3. The formulation of a research strategy for the investigation of *causal* hypotheses in circumstances where the phenomena being investigated normally occur in the midst of many other interacting variables.
4. The drawing of a representative sample of boys where complete lists of boys in the sample were not available.

A team of five research personnel worked on these procedures over fourteen months. In that period, we interviewed or tested some 571 persons (who were, of course, quite separate from the 1,565 boys who took part in the investigation proper). The tools we developed were described in my earlier paper to the British Association and may be examined in detail in the full report of the inquiry. As far as these research tools are concerned, all I have space to do here is to present a summary of their construction and final forms.

Developing Hypothesis. The hypotheses were derived from intensive interviews with boy viewers and with parents of boy viewers, and from lengthy interviews with broadcasters and authoritative persons who had publicly expressed views about the influence of television (179 in all). We also drew on press clippings, going back to 1950, and we critically appraised the evidence offered in learned publications on the subject over the preceding 20 years. This evidence was subject to systematic challenging and was content analysed. It yielded 22 principal hypotheses including the following:

Long term exposure to television violence
- increases boy's participation in violent behaviour;
- increases the use of bad language or swearing;
- increases boy's pre-occupation with the various forms of violence shown on television;
- makes boys more callous in their reactions to the spectacle of violence in the world around them;
- increases the degree of acceptance of violence as a way to solve problems;
- increases the degree to which boys find violence attractive;
- reduces boys' respect for authority.

We also formulated hypotheses about the effects of particular *kinds* of television violence. The 26 types included:
- fictional violence of a realistic kind;
- violence performed by 'good guys';
- cartoon violence;
- violence as presented in the News;
- violence of the sort shown in Westerns;
- science fiction violence;
- violence in a good cause;
- violence in sports programmes.

We were thus in a position to examine hypotheses linking violent behaviour to exposure, first, to television violence in *general* and second, to a wide range of *different kinds* of television violence.

Developing a technique for securing information about the degree to which boys engage in violent behaviour. The general approach with this measure was based closely upon that which I had used earlier in developing a measure of boys' involvement in stealing – the problems of getting boys to give accurate information about violent behaviour being broadly similar to those involved in getting accurate information about theft.

The precise form of the required measure of violent behaviour had however to be geared to the subtleties of violence phenomena and the construction process was therefore long and demanding. We used the method of Progressive Modification. We began with a first version of the procedure designed to meet the known problems of securing this class of information. This version was then subject to test (upon a small sample of boys) and was then modified to overcome the points of failure that the test had shown up. This modification was similarly tested and then modified again. There were four of these test-modification cycles, involving 203 boys in all.

In its final form, as used in this inquiry, the measuring device had the following five features.

- The interview was administered to boys at the Survey Research Centre's premises under conditions of stressed anonymity and privacy. Each boy was given a false name.
- In the first of two stages in the eliciting procedure, the boy and the interviewer sat on opposite sides of a sorting screen, the boy being required to sort 53 cards on each one of which was printed some form of violent behaviour (eg, "I have kicked somebody"). He was asked to sort the cards as "YES" or "NO" according to whether or not he had done the act shown on the card in the last six months. His sorting process could not be seen by the interviewer.
- After this, the boy went through a procedure designed to bring out any resistances he had to making truthful statements about his violence behaviour and to influence him against untruthfulness or defensiveness. He then re-sorted all the cards previously sorted as "Not in the last six months".
- After this, the boy was asked a series of questions about each of his "YES" cards in order to establish: all the different sorts of acts on the basis of which he had sorted the card as "YES"; the number of times each of these had been done; and, for each act, the nature of the act, the object of the act and the implement, if any.
- The whole of the elicitation process was controlled by a booklet of instructions within which the 53 violent acts were inserted at appropriate places in relation to the instructions. This administration involved: rule teaching and reminders of rules; the stressing of important points and distinctions relating to specific acts on the cards; the administration of challenging and probing techniques; and a range of other control methods.

Developing a Measure of Exposure to Television Violence. The extent of a boy's exposure to television violence was defined in terms of his viewing of the violence presented in a sample of TV programmes broadcast from 1959 to 1971. There were 68 programmes in the sample. Each programme had been rated for the level of violence of its content by a panel of experienced viewers (former members of the BBC's viewing panel). Each programme had also been rated in terms of the *kinds* of violence it presented.

An elaborate procedure was used to secure information about the *extent* of each boys's exposure to each programme in the sample. As a result, we could assess for each boy the relative extent of his exposure to television violence and also the relative extent of his exposure to a given *kind* of violence (eg, fictional violence of the realistic kind; Westerns; cartoon violence). The method was tested in intensive interviews before being used in the inquiry proper and this testing procedure provided an index falling between one of reliability and one of validity. The index was high for each of the measures involved (falling close to the range 0.93 to 0.87). This particular research tool is described at length in the full report.

Developing a Research Strategy for Investigating Causal Hypotheses. A vital part of our inquiry turned upon the strategy necessary for investigating a causal hypothesis about an on-going social process. The trouble with such an objective is that many different factors are likely to enter into the causal process, confusing our study of what causes what.

We could not retreat into the laboratory in an attempt to isolate television exposure and personal violence from all the other factors, for that would have rendered both variables hopelessly unrealistic. We had to conduct the study within the real life social setting.

The research strategy we used is best described in terms of our central hypothesis:

> High exposure to television violence increased the degree to which boys engage in violent behaviour.

This strategy begins with the comparison of two groups of boys, namely the *Qualifiers* and the *Controls*. The Qualifiers are the *higher* scoring half of the sample in terms of exposure to television violence and the Controls are the *lower* scoring half. Any differences between the Qualifiers and Controls (in terms of violent behaviour) can be attributed to one or more of the following:

(a) the differential effect of the greater exposure of the Qualifiers to television violence;
(b) original differences between the Qualifying and the Control samples in terms of characteristics or background variables that are associated with the level of violent behaviour;
(c) a tendency for boys of a violent disposition to watch a greater amount of television violence (ie, a process in reverse to that hypothesised).

If the difference in the violence level of Qualifiers and Controls is due simply to original differences between them (ie, [b] above), then the close matching or equating of the two samples in terms of the correlates of violent behaviour should, in principle, tend to eliminate the difference between them in terms of violent behaviour. If, after such matching, there is no meaningful residual difference between the violence scores of the qualifiers and the controls we have to conclude that the evidence does *not* support the hypothesis. If on the other hand there is a meaningful difference in violence level remaining after matching, then we have evidence in support of the hypothesis. Not evidence that proves it, but evidence in support of it.

Hence a key step in the study of our central hypothesis was to develop a powerful composite of correlates or predictors of violent behaviour, and to equate the Controls to Qualifiers in terms of this composite. We developed a pool of 227 possible predictors of violent behaviour and used it, within the Stable Correlate Technique, to equate the Controls to the Qualifiers. The variables related broadly to physical characteristics, rearing patterns, environmental factors,

family composition, special experiences and achievements, parental characteristics and background, the socio-economic level of the father, interviewing conditions and so on.

The effect of the Stable Correlate* matching process is to reconstitute the Controls so that they are the same as the Qualifiers in terms of the relevant background factors and characteristics. The process also changes the mean of the control sample and makes it approximate to what the Controls would have scored if they had been the same as the Qualifiers in terms of those relevant background factors. The residual difference between the mean of the Qualifiers on the one hand and the mean of the modified Controls on the other, may be regarded as an estimate of the effect of the independent variables (exposure to television violence, in this case) on the dependent variable (violent behaviour).

The results of applying the matching process to various behavioural hypotheses are given in Table 2. These are the entries against 'forward' – meaning the forward or normal form of these hypotheses. It can be seen that the evidence gives support to all four behavioural hypotheses.

However, those findings still leave open the possibility that the residual differences are a reflection in whole or in part of the hypotheses working in reverse. In other words they could, at least partly, reflect the tendency of violent boys – simply because they *are* more violent – to watch a greater amount of violent television.

Accordingly, the whole testing procedure was repeated on the *reverse* formulations of each hypothesis; for example: "Boys with violent dispositions are thereby led to watch a greater amount of violence on television". If we assume that, in the absence of a television effect, boys with the higher scores for violent behaviour are by disposition more violent than boys with lower scores for violent behaviour, then a test of the above hypothesis becomes feasible. Such a test was made for each of the listed behavioural hypotheses, with the results shown against 'Reverse' in Table 2.

If both the reverse and the forward forms of test are positive, then we must conclude that though the evidence gives support to the forward hypothesis, it remains a possibility that such support is, in whole or in part, merely a reflection of the hypothesis working in reverse. If, on the other hand, the forward form of the hypothesis is supported by the evidence while the reverse is not, then the support for the forward form of the hypothesis becomes relatively unambiguous.

Data Collection Using the Tools and Techniques and Research Strategy Developed. Once the required measures had been constructed and the research strategy developed, we began to collect data from a representative sample of London boys in the age range 13-16 years (a two-stage stratified sample geared to the random principle). During this phase, background information was collected from the boy and his parents at home; but for the administration of all tests and the complex questioning procedures the boys were brought to the Survey Research Centre by car. Of the target sample of 2,001 boys drawn for interview, 79% went fully through both home and Centre procedures.

*The Stable Correlate technique is presented in "Matching and Prediction on the Principle of Biological Classification", W.A. Belson, in *Applied Statistics*, Vol. 8 (2), 1959.

FINDINGS

The state of the technology of causal research is such that we cannot speak of firm proof in relation to the phenomena here investigated. On the other hand, we *can* say that the evidence is non-supportive, supportive, or strongly supportive. It is on that basis that the different findings are presented in this paper.

Secondly, though I am concentrating in this paper upon the relationship of violent behaviour and exposure to television violence, there is no suggestion on my part that other factors – physical, psychological, environmental – do not enter in a causally potent way into the development of violence in a society. I consider that it would be ridiculous to suggest any such thing. It just happens that we are focusing our attention in this study upon the influence of television violence in its own right.

The Amount of Serious Violence

I have already reported on the amount of violence committed by London boys* and so I will limit myself on this occasion to the incidence of violence of the serious kind. The acts of violence committed by the 1,565 boys in the sample were graded by analysts into six categories according to the level of seriousness. These categories were: 'Only Very Slightly Violent', 'A Bit Violent', 'Fairly Violent', 'Quite Violent', 'Very Violent', 'Extremely Violent'.**

Table 1

Number of times SERIOUS violence was committed in the six month period studied	Number of boys	
0	840	
1	186	
2	110	
3	62	
4	44	
5	45	
6	33	
7	25	
8	22	
9	10	
10-39	121	12% of sample
40-69	47	
70-99	7	
100+	13	

*"Violent Attitudes and Behaviour", W.A. Belson, in *The Vicious Circle*, a collection of the papers presented at the 1974 Annual Conference of the National Association for Maternal and Child Welfare.

**There were thousands of acts of many different kinds and characters in the categories of 'Quite Violent' and 'Very Violent'. Here are a few examples from each category.

Examples of 'Quite' violent acts: I knocked a boy off his bike as he rode past/I deliberately dropped a lighted cigarette into a shopper's bag/I deliberately ran into a parked car with a milk float/I threw pieces of brick at a girl/I busted the telephone in a telephone box/I threatened to kill my father.

Examples of 'Very' violent acts: I deliberately kicked a boy in the crotch as hard as I could/I loosened the screws on the handlebars of a boy's bike so that he would have a crash/I burned a boy on the chest with a cigarette while my mates held him down/I told a boy his mother had been killed just to upset him/I tried to force a girl to have sexual intercourse with me/I took a hammer to a car and laid into it/I banged a boy's head against a wall.

The total number of acts reported was very large, though the greater part of them took the form of rough mischief and aggravation. However, the sample total for serious violence made up of the categories 'Quite', 'Very' and 'Extremely' violent was in excess of nine thousand acts, the average over the six month period being approximately six acts. The distribution of these acts, over the whole sample, is shown in Table 1.

Perhaps the the salient feature of Table 1 is that 12% of the sample of boys were involved in serious violence on a fairly repetitive basis (ie, 10 or more times in the six month period studied). Acts of this serious kind were widely spread across the different sections of society, though they tended to be committed somewhat more by those involved in truancy, those who dislike school, those from large families, and those whose fathers are in the lower socio-economic groupings; and somewhat less often by boys from grammar schools.

The Effects of Long-Term Exposure to Television Violence on Boys' Behaviour

For the behavioural hypotheses investigated the principal findings were as set out in Table 2.

The evidence shown there strongly supports the view that long-term exposure to television violence increases the degree to which boys engage in serious violence. To get this finding about serious violence into perspective, we should remember that the average frequency level was about six times over a six month period, that about half of the sample of boys were not involved at all in this level of violence and that its main contributors were a 12% section of the boy population. Nonetheless, any appreciable increase in that sort of violence would add up to a lot of serious violence.

The evidence in Table 2 also supports the hypotheses that long-term exposure to television violence increases the degree to which: boys engage in violent behaviour of the less serious kinds; boys use bad language or swear; boys are violent in sport or play. However, for these particular hypotheses, we cannot rule out the possibility that the findings spring in part at least from the operation of a reverse process – that violent behaviour itself leads boys to watching more violence on television.

The Effects of Exposure to Particular Kinds of Television Violence

A separate study was made of hypotheses about the effects of exposure to different kinds of television violence. The evidence from these tests gave a greater degree of support to some of these hypotheses than to others, and there were some for which there was no meaningful support at all. The hypotheses getting most support were the following:

Serious violence is increased by long term exposure to:

- plays or films in which close personal relationships are a major theme and which feature verbal or physical violence;
- programmes in which the violence seems just thrown in for its own sake or is not necessary to the plot;
- programmes featuring fictional violence of a realistic kind;

Table 2

Behavioural Hypotheses	Direction of Hypothesis	Qualifiers* (1)	Controls† (2)	Modified controls+ (3)	Difference between (1) and (3)	Difference as % of (3)	Significance of difference P
High exposure to television violence increases the degree to which:							
• boys engage in serious violence	Forward	7.48	4.74	5.02	2.46	49.00%	.02
	Reverse	582.65	575.50	574.14	8.51	1.48%	.26
• boys engage in violence (all levels)**	Forward	56.76	46.79	51.01	5.75	11.27%	.03
	Reverse	607.81	549.33	563.51	44.30	7.86%	<.01
• Boys use bad language/swear	Forward	86.57	57.85	73.71	12.86	17.45%	.03
	Reverse	627.56	531.12	577.55	50.01	8.66%	<.01
• boys are violent in sport or play	Forward	18.92	14.74	16.44	2.48	15.09%	.04
	Reverse	604.65	553.60	559.33	45.32	8.10%	<.01

*Those who have seen a lot of television violence.

†Those who have seen less television violence.

**Expressed as a weighted score.

+Results for Controls after the application of the weighting process.

– programmes in which the violence is presented as being in a good cause;
– Westerns of the violent kind.

The hypotheses getting little or no support from the evidence were those postulating that serious violence by boys is increased by long-term exposure to:

– sporting programmes (exclusive of wrestling and boxing);
– cartoon programmes;
– science fiction programmes;
– comedy programmes that present slap-stick violence and/or verbal abuse.

It is important that in interpreting this set of findings we have it in mind that the 25 measures of exposure to specific forms of television violence were correlated with each other and that over a quarter of these correlations were very high (at the level of .90 or over) and about half were moderately high at the level of .70 or over). Nonetheless, the extent of non-correlation was sufficient for us to identify the two groups of programmes set out above. From these and other findings, we were able to develop provisional guidelines for the control of television violence.

The Effects of Long-Term Exposure to Television Violence on Boys' Attitudes

Many of our hypotheses dealt with the effect of television violence upon boys' attitudes towards violence and its use. Perhaps the most interesting feature of the inquiry was that, by and large, the evidence tended not to support the hypotheses concerning attitudes. I suggest that the reader, in considering this finding, keeps it in mind that we are dealing here with attitudes or reactions of the conscious kind – with boys' perceived views about how they stand in relation to the concept or idea of violence.

The evidence gives little or no support to the hypothesis that long-term exposure to television violence changes, in any appreciable way, boy's conscious attitudes or reactions or opinions of the kind we investigated. More specifically, the evidence does not support the views that television violence

– increased callousness of reaction to the occurrence of violence (whether local or reported in the news);
– leads boys to accept violence as a way to solve problems;
– leads boys to feel that violence is inevitable.

Though the difference relating to 'attractiveness of violence' is statistically significant, the size of that difference is very small (3.85%) and gives the hypothesis concerned only very little support.

The evidence does not give any meaningful support to the view that long-term exposure to television affects boys' consideration for others or their respect for authority. Nor does the evidence support the view that long-term exposure to television violence causes boys to be preoccupied with the acts of violence they have seen on television or to feel willing to commit such acts.

THE DIFFERENCE BETWEEN THE BEHAVIOURAL AND ATTITUDINAL HYPOTHESES

I think it vital that we consider very carefully the possible implications of the sharp difference in the nature of our findings for the behavioural hypotheses on the one hand and the attitude-type hypotheses on the other.

It seems that television can increase quite appreciably the level of boys' involvement in violent behaviour without any change in their conscious attitudes towards violence. One possibility, and I stress it is only a possibility, is that an unconscious process is going on – that with a long-term input of television violence, the boys' behaviour is changing without their being much *aware* of it or of *feeling* any different about the idea or spectacle of violence.

To me, this situation is suggestive of a process of 'disinhibition' – particularly in view of the support given by other parts of the evidence to the view that the violence most increased by television is of the unplanned, *spontaneous* and unskilled kind. A disinhibition process would in this case involve the progressive reduction, through the constant presentation of television violence, of those inhibitions or constraints that the socialising agencies in a community had built up in the boys against being violent.

There is no good reason for thinking that boys would be conscious of any such disinhibition process, particularly as the inhibitions themselves tend to act automatically and unconsciously. But in any case we have in our society the phenomenon of the mass media, including television, giving fairly constant verbal support to the ideal of non-violence, coincidental with the presentation of a great deal of violence. What I have just said about 'disinhibition' is, of course, an hypothesis about an underlying process and must, I stress, be subject to empirical investigation.

RECOMMENDATIONS

In my report, I have made a number of recommendations. Steps should be taken as soon as possible to achieve a major cut-back in the total amount of violence being presented on television.

1. Steps should be taken as soon as possible to achieve a major cut-back in the total amount of violence being presented on television.

2. A research project should be set up specifically to challenge, to tighten up and to extend the guide-line system. The nature of the required research is indicated in the report.

3. A regular monitoring service should be established to provide periodic analyses of the amount and the kind of violence that is being presented through television. Such analyses should be made in terms of the criteria or principles embedded in the guide-line system. •

The full report *Television Violence and the Adolescent Boy* will be published by Teakfield (1 Westmead, Farnborough, UK) in March 1978.

The European Broadcasting Union— Past, Present and Future

Régis de Kalbermatten, Secretary General, EBU

NEARLY 28 years ago, on 12 February 1950 in the British seaside resort of Torquay, representatives of 23 broadcasting organisations in Western Europe and the Mediterranean area put their signature to a document which brought into being a new body concerned with international cooperation. It was called the European Broadcasting Union (EBU), and in the years which have passed, the ever-growing number of Members has overcome geographical, political, legal and technical boundaries to bring to mankind's living rooms the sound and sight of many of the world's most interesting events.

Although comparatively young in years, the EBU's ancestry is distinguished in that it is the direct descendant of the former International Broadcasting Union (IBU) founded in Geneva, Switzerland, in 1925 to assist in the preparation of frequency assignment plans, the promotion and coordination of inter-European programme exchanges and the defence of Members' interests. The IBU survived as a letterhead during the Second World War but became a victim of the post-war political situation in Europe. It was with the aim of restoring some semblance of order to the international broadcasting scene that the British Broadcasting Corporation (BBC) proposed the Torquay meeting from which the EBU emerged.

More Cooperation, Worldwide

The principal aim of the new Union was to meet the needs of Western European broadcasters, but from the very beginning it established relations with broadcasting organisations in other continents and accepted many of them as Associate Members. The Active Members, drawn from organisations in the European Broadcasting Area,* never allowed the initial European character of the EBU to mean a limitation in the range of interests. Both short-term self-interest and long-term assessments of the likely future development of broadcasting pointed in the same direction – towards the need for an ever-closer cooperation, not only within Europe but between broadcasters worldwide. The result of this policy is that the Union has grown to a current total membership of 107 in 77 countries composed of 38 Active and Supplementary Active Members in 31 countires and 69 Associate Members in 46 countries. Broadcasting organisations situated outside the European Broadcasting Area may only be admitted as Associate Members but they enjoy the same rights as Active Members, except for the right to vote and to be elected to any statutory function of the Union.

To be an EBU Member, a broadcasting organisation must operate in a country affiliated to the International Telecommunication Union and be authorised by the competent authority to operate a broadcasting service. An organisation is considered to perform the latter if it produces and has the general responsibility for the programmes broadcast by one or more transmitters permanently at its disposal and is of a national character and importance.

*As defined by the International Telecommunication Union, this embraces the area from Iceland in the West, to Russia, Turkey, Syria, and Iraq in the East, Scandinavia in the North, and North Africa in the South.

Five Aims

As a completely professional, non-commercial, non-governmental and non-political body, the principal aims of the EBU are:

(a) to support in every domain the interests of broadcasting organisations and to establish relations with other broadcasting organisations or groups of such organisations;
(b) to promote and coordinate the study of all questions relating to broadcasting, and to ensure the exchange of information on all matters of general interest to broadcasting services;
(c) to promote and to take all measures designed to assist the development of broadcasting in all its forms;
(d) to seek the solution, by means of international cooperation, of any differences that may arise;
(e) to use its best endeavours to ensure that all its Members respect the provisions of international agreements relating to all aspects of broadcasting.

From an organisational point of view, the general policy of the Union, the power of decision in the orientation of its work, the determination of the programme of its activities and membership questions, are dealt with by a General Assembly and an Administrative Council. The preparatory work in advance of their meetings is carried out by four Committees and subsidiary bodies, with the assistance of the Permanent Services.

Supreme authority rests with the General Assembly composed of all Members. It meets once a year in ordinary session and can, if necessary, meet in extraordinary session. The Assembly elects the Administrative Council and also a President and two Vice-Presidents from among the representatives of the 15 active member organisations holding seats on the Council. Present office holders are Sir Charles Curran, (BBC), who has been President since 1 January 1973, with Mr Jean Autin of Télédiffusion de France, and Dr Otto Oberhammer of Österreichischer Rundfunk (Austria) as Vice-Presidents from 1 January 1977. As individuals, they hold office for two years at a time, compared with membership of the Council, which is done on an organisational basis and to which organisations are elected for a period of four consecutive financial years.

The Administrative Council normally meets twice a year and holds all the rights and powers of the General Assembly between ordinary sessions. As the principal executive body, it examines recommendations from the various Committees and Study Groups reporting to it and proposes various

measures for their enactment. The Study Groups vary according to requirements but those now in existence deal with financial affairs, satellite problems, the Union's Statutes, assistance to broadcasting organisations in developing countries, and the international standardisation of broadcasting statistics.

The principal activities of the EBU are, however, channelled via the four permanent and specialised Committees – the Television and Radio Programme Committees, the Legal Committee and the Technical Committee, together with their various Working Parties, Sub-Groups and ad hoc Groups. The Committees, through the specialists who participate in their work, play an important role although they are of a strictly consultative nature and report to the Administrative Council on all questions within their competence.

The Permanent Services

To assist the various organs of the Union in their work and to carry out a multitude of activities, there is a permanent staff of over 200 people located at the headquarters in Geneva and the Technical Centre in Brussels, Belgium. Consisting of experts in various fields – administrators, engineers, jurists and specialists in the planning and coordination of international news and programme exchanges – they embrace some half-a dozen nationalities, with the senior staff usually being recruited on a permanent basis from member organisations. Known collectively as the Permanent Services, they are under the overall management of a Secretary General supported by four Statutory Directors who are responsible for the Radio Programme, Television Programme and Legal Affairs Departments in Geneva and the Brussels Technical Centre. There is, in addition, a General Affairs Service administered directly by the Secretary General and this includes the Secretariat, Administration and Finance, and Publications.

Since the foundation of the Union, the Geneva Permanent Services have been housed in rented office accommodation but in January 1978 they will move into a custom-designed headquarters building which has been planned to allow for future expansion over many years and has facilities for meetings and the handling of the daily television news and programme exchanges. A major extension has also been opened in the past year to the Brussels Technical Centre. The new premises provide better accommodation for the data processing and telex equipment, the planning of Eurovision transmissions and printing and publication services.

The steady expansion of the EBU's activities, particularly television, is reflected in its finances. There are basically four budgets, the first of which is the Ordinary Budget whose revenue comes from the Subscriptions of Active and Supplementary Active Members and the Contributions of Associate Members, as well as interest from the Union's own funds and other miscellaneous income. This budget covers the operating costs of the Permanent Services and from 1950 to 1976 annual receipts increased from Sw.fr. 447,000 to Sw.fr. 13,550,000.

The second category of budget is the Television/Eurovision Budget which includes the general costs of the organisation and coordination of the Eurovision news and programme exchanges and as such is financed only by Members participating in Eurovision. The money was originally included in the Ordinary Budget but in the first separate accounting year, 1961, there was an expenditure of Sw.fr. 596,000 compared with Sw.fr. 14,916,000 last year.

The expense of purchasing rights for various events and the subsequent production costs forms the third budget. The money is advanced by the EBU and refunds are obtained from Members on the basis of their participation. In 1960, the total advanced was Sw.fr. 101,000 and in 1976, the year of the Olympic Games, it was Sw.fr. 16,500,000. The costs are financed mainly from an operating fund contributed to by Eurovision Members.

The last category of budget is concerned with the payment for and sharing of sound and vision circuit costs arising from the activities of Eurovision. In 1961, these amounted to Sw.fr. 7,036,000 and today, they total Sw.fr. 38,000,000.

The assets administered by the EBU's Permanent Services also reflect the developments over the years since 1950. They then totalled Sw.fr. 437,000. Today, they are Sw.fr. 47,607,000.

Eurovision's Star-Burst

Reference has been made above to Eurovision, the world's first regional and now, by satellites, virtually worldwide television network. It is the most spectacular element of international cooperation in news and programme exchanges within the EBU – it has been said that if Eurovision did not exist, it would have to be invented. Since its inception in June 1954 when the television audiences of eight European countries watched live coverage of the famous Narcissus Festival from Montreux, Switzerland, the star-burst introductory emblem and the soaring, triumphal notes from 'Te Deum' of the 17th century French composer, Marc-Antoine Charpentier, have become familiar to millions of television viewers. Hardly a day passes without Eurovision bringing to their screens some major sporting event, the comings and goings of world leaders, a space exploit, or a special entertainment programme.

When the EBU was created in 1950, it revived a plan which had been proposed two years earlier for a "programme-clearing-house" to facilitate exchange of television productions between national networks throughout Europe. It was argued that only a central organisation such as the EBU could deal with the problem effectively. Programme exchanges would benefit both larger and smaller organisations, if in different ways, and, in particular, those broadcasting organisations which were just starting their TV services.

Britain and France were bilaterally exchanging television programmes by 1950. In August that year, there was the first international television relay, linking Calais, Dover and London. This, coupled with the rapid development of television in other European countries, encouraged the EBU to authorise a study leading to the establishment of an experimental programme exchange system.

By 1952 broadcasters were seriously considering ideas for a European-wide network. The event which brought this idea closer to reality was the Coronation of the UK's Queen Elizabeth II in June 1953. The Danish, Dutch, French and German television systems broadcast the event in cooperation with the BBC, and this first multilateral television relay was the impetus for Eurovision.

The first transmission under the name of Eurovision (known internally as the 'Lille Experiment', because the control centre was then at Lille in France) was held, as has been said, in June 1954. The first Olympic Games on Eurovision were the Winter Games from Italy in January 1956. The first service trials of the now routine daily news exchanges occurred in October 1958. Today, over half of the Eurovision network operations comprises the daily distribution of news. Thanks to these transmissions emanating from the television services of the countries concerned and from the newsfilm agencies, visual coverage of any important event occurring anywhere in the world is available the same day for broadcast by member organisations in their news programmes.

Three Exchanges a Day

There are now three exchanges a day and one of the more recent developments is the introduction of an experimental "choice-after-viewing" procedure. But Eurovision news is not simply a question of providing a service to Members in Western Europe and the Mediterranean area. There are also regular daily exchanges with Intervision in Eastern Europe and, via Intelsat satellites, with the member broadcasting organisations of the Arab States Broadcasting Union, the Asia-Pacific Broadcasting Union and the Organizacion de la Television Iberoamericana. There is also an EBU TV News Coordination Bureau in New York to facilitate transatlantic satellite transmissions.

The heart of Eurovision is the permanent terrestrial sound and vision network which connects 31 television services in 24 countries in the European Broadcasting Area. The only exceptions are Cyprus, Iceland, Israel, Jordan and Malta – but in the case of Israel and Jordan, the links are by satellite. For some years, the circuits required for exchanges were hired on each occasion when they were needed. However, as a result of cost studies, it was found that the annual cost could be considerably reduced by permanently renting the circuits carrying the most traffic. To render their utilisation more efficient, various technical improvements have been steadily introduced including remote switching from the Eurovision Control Centre in Brussels and the use of an SIS system (sound-in-syncs) which is a digital technique whereby the sound can be transmitted on the same circuit as the vision, with better sound quality than on the circuits previously used. An automatic message-switching system has also been installed in Geneva, London and Brussels, which makes it possible to save on telex circuit costs, and a computer is now being used to plan Eurovision transmissions. The next major development will be the transfer in 1978 of the Eurovision Control Centre from its present cramped quarters in the dome of the Brussels Palais de Justice to accommodation in the new premises of the Belgian broadcasting organisations.

While Brussels is responsible for the technical planning and direction of Eurovision transmissions, the administrative, legal and programme work is carried out at the Geneva headquarters. Information is collected and distributed about each programme or news items offered for network transmission, precise timings are established for operations, commentators' positions at the point of origin are determined if they are required, and the necessary legal and copyright negotiations are conducted.

But basically, Eurovision's ground rules are simple. The most important is that the EBU is a clearing house for providing programmes that its Members want. It does not originate programmes, it is simply the coordinator and it never requires a Member to accept a programme.

The other main guiding principle of Eurovision concerns its financing – in particular, the method of sharing costs between members. The arrangements adopted by the EBU represent an ingenious and interesting approach to a difficult issue that faces all international organisations.

The underlying principle was to make greater demands on the larger broadcasting organisations and correspondingly smaller demands on organisations that were smaller or just starting television services. The success of this principle depended on the awareness among EBU members of the importance of Eurovision for the development of television both in members' countries and beyond.

The organisation and transmission of Eurovision programmes involves a variety of facilities: expenses incurred by the Permanent Services, the costs of acquiring broadcasting rights, and sometimes the costs of production, and sound and vision circuits for technical coordination and transmission. The methods used vary according to the nature of the cost. The most significant concerns the costs of sharing the expensive vision circuits.

Since the application of the individual PTT's accounting rules would have created a series of inequities, Eurovision applied its own mix of cost-sharing principles, including a straightforward division into equal parts, allocating shares in proportion to the amount of EBU membership subscriptions or of television licences (but with a ceiling), and with some weighting according to the duration of an individual organisations's participation in a programme transmission. Certain costs, of course, are carried by the members themselves, including the technical, staff and other costs of originating a Eurovision programme.

International television programme cooperation within the EBU is not limited to Eurovision. There are other methods which are no less important but perhaps less spectacular. While the Television Programme Committee is concerned with Eurovision, it is, in addition, responsible not only for encouraging and organising classical gatherings of professionals to exchange information and experience but also more sophisticated forms such as the annual Milan Screening Sessions, which have developed into a European programme market, the joint commissioning of programmes, the patronage and coordination of a number of television festivals and, last but not least, international staff training courses. Of the latter, the best known perhaps is the EBU Seminar for Producers and Directors of Educational Television, held in Basle, Switzerland, every year since 1962. The EBU also initiated three international conferences on educational broadcasting – in Rome in 1961, Tokyo 1964 and Paris 1967.

Radio – Old and New

Radio is in some ways the oldest and in other ways the most recent preoccupation of the Union. When the EBU was founded, the immense potential of television was already apparent and as this translated itself into reality so, inevitably, were the problems specific to radio thrust more and more into

the background. Because of concern at this development, the General Assembly accepted the recommendation of a specialised working party appointed to examine the future of sound broadcasting that the hitherto single Programme Committee, whose terms of reference included radio and television, should be split into two distinct Committees. As a result, since 1964, the Radio Programme Committee (or Sound Broadcasting Committee, as it was first known) has concentrated on seeking areas in which, by effective international cooperation, enrichment and, not infrequently, economy can be achieved in the national programmes of EBU Members.

Obviously, the principal area of activity in international radio cooperation is concerned with music in all its many shapes and forms, and an enormous amount of programme exchanges as well as jointly sponsored musical projects are carried out under the authority of the Committee. To mention some examples of these: each year a season of concerts of exceptional interest is planned – concerts of a scope and cost beyond the resources of any organisation acting singly. The pattern has now established itself of an average of 14 organisations jointly financing these concerts and rebroadcasting them live simultaneously. This has brought live broadcasting back on to the European scene – a thing in danger of disappearing in view of the almost universal use of tape-recording and subsequently editing nowadays – and has added to the interest engendered by these concerts in giving to them a 'sense of occasion'. Since 1973, most European countries have relayed the concerts in stereo, a factor which has given an additional lease of life to this very important project.

Other examples of close cooperation lie in the joint commemoration of major musical anniversaries, the organising of instrumental competitions and the co-financement of special productions of operas, concentrating on those which, though musically valid, tend to be ignored in view of the difficulty or cost of mounting them. The most expensive joint single opera production to date in the history of broadcasting was the special stereophonic production of Darius Milhaud's immense opera 'Christophe Colombe' (first performed in Berlin in 1930). This was undertaken by Radiodiffusion Télévision Belge in 1973 and co-financed by 14 EBU Members. One of the EBU's most important opera projects is currently being undertaken in collaboration with a major international gramophone company. This is the recording of six Haydn operas which have not been heard for some two hundred years. The EBU's contribution is primarily focused on the preparation of material in cases where it does not exist. The operas are being recorded over three years under the baton of Maestro Antal Dorati and, following broadcasts of each by the EBU sponsoring organisations, the records will be released on the commercial market. Another opera co-production will be a special tape recording of Gershwin's 'Lady, Be Good' which will be made by Belgische Radio en Televisie and National Public Radio in the United States.

Other areas of activity in the field of serious music include the publishing of orchestral music in the public domain at a very low cost but at high quality and arranging the loan of orchestral materials between member organisations. To achieve this, a highly complex Documentation Bureau has been set up in Brussels which keeps accurate and up-to-the-minute card indexes of all orchestral materials held by member organisations throughout Europe and which, in consequence, can very readily trace a request for a particular work from one organisation by putting it in touch with another which owns the material sought.

Jazz and light music of all kinds are not overlooked and, indeed, form an important area of the Radio Programme Committee's activities. Regular events in both these fields take place under EBU auspices – examples are the biennial Munich International Light Music Forum and one jazz festival in a European country selected each year. In the field of drama and the spoken word, the EBU is no less active, though obviously results are less spectacular in view of the language problems involved. A number of important plays not sufficiently recognised internationally have been brought to light and produced on a worldwide basis as a result of EBU initiative in this direction.

Another particularly important area is concerned with sound archives – that vast treasure-house of recorded history and riches – and machinery has been set up to ensure very rapid contact and communication between archivists so that important material can be exchanged at short notice. In addition, a number of programme projects based on archive material in the possession of various members have been initiated.

A Radio Atlas

One of the more recent activities in radio is the question of broadcasts for motorists. A special EBU Working Party is attracting the participation of an increasing number of organisations, and multilateral campaigns are now a regular feature of the major tourist traffic periods. As part of this activity, the EBU, in conjunction with a Swiss publishing house, is to publish a radio atlas.

As compared with 1950 when activity in the legal field was mainly concerned with drawing up various standard contracts which were useful but modest in scope, the work of the Legal Committee, supported by the Legal Affairs Department, today extends to all areas of interest to the EBU. In spheres ranging from that of membership – which often requires an authoritative legal opinion – satellites, negotiations for contracts of all kinds with, for example, the music publishers or the organisers of sports events, relations with international bodies such as the UN, UNESCO, the World Intellectual Property Organisation (WIPO) or the Council of Europe, and a host of other questions affecting the Union, the Committee plays an important role in studying problems and devising solutions. Its work is of particular value since it brings together legal experts from all the Active and Associate Members of the EBU and thus represents a body of professional experience drawn from the four corners of the world.

To assist Members in producing and exchanging programmes, the EBU concerns itself on the legal side with the rights involved. These rights are usually entrenched in international treaties. This is why the Union has played an active part in assisting the drafting and revising of the international treaties on copyright and neighbouring rights. Thanks to careful preparatory work, it was one of the most influential voices at the Berne Convention revision conference in Stockholm in 1967 and in Paris in 1971 when the Convention was revised

again, together with the Universal Convention. The result was that many of the new provisions cater for the needs of broadcasters, with considerable benefits for developing countries.

Within Europe itself, the EBU has been involved in securing international treaties answering to the specific needs of broadcasters, in the form of three European agreements elaborated by the Council of Europe and subscribed to by a large number of countries. Among these, special mention should be made of the European Agreement for the Suppression of Pirate Broadcasting Stations, which has proved highly effective in ridding EBU Members of a serious nuisance.

Since the earliest days, an important aspect of EBU legal work has been cooperation with international groupings in framing standard contracts which have served as models for many Members' domestic agreements. One has only to think of the standard contract between the EBU and the International Bureau of the Societies Administering the Rights of Mechanical Recording and Reproduction (BIEM), the international body controlling recording rights, which standardising the terms and conditions for the recording and dispatching of radio and television programmes; the standard contract with the International Federation of the Phonographic Industry; and the standard contract with the International Union of Music Publishers enabling EBU Members to hire musical scores on uniform terms.

The growth of Eurovision involved a great many problems for the EBU Legal Affairs Department, and it has cooperated closely with the Television Programme Committee in the task of expanding programme exchanges. The Legal Committee has worked to establish and improve the EBU's agreement with the International Federations of Performers. It has also devised an appropriate framework for EBU relations with the International newsfilm agencies and drawn up a model contract for the purchase of television rights in sporting events, thus enabling Members to contract on a largely uniform basis with national sports promoters.

Broadcasting by Satellite

Another important service in the legal field is that which the Union renders at the national level. Numerous contracts have been negotiated on behalf of individual members, and the Legal Affairs Department has framed a substancial number of legislative texts on copyright, the organisation of broadcasting and the structure of authors' societies; these texts have meant, among other things, an easing of Members' financial commitments. This service has been of particular importance where the beneficiaries are EBU Members in developing countries.

In recent years one of the Legal Committee's most important activities has been in the sphere of legal problems connected with satellite television. It has helped to lower rates on both sides of the Atlantic, has assisted in improving the rules governing the use of the European half of the space segment, and was concerned with obtaining a worldwide convention for the protection of satellite television broadcasts. A current preoccupation is the many problems which will be raised by direct broadcast satellites. The Committee has given detailed examination to the questions surrounding coverage and spillover zones in the light of the outcome of the recent ITU World Administrative Radio Conference for the Planning of the Broadcasting Satellite Service in the 12 GHz Band. It was also involved with other EBU bodies in the preparations for a joint EBU/European Space Agency Symposium on Direct Satellite Broadcasting held in Dublin last May with the cooperation of the Irish Government. The purpose of the Symposium was to draw the attention of public opinion, governmental authorities, manufacturers, radio and television executives and the principal professional groups to the problems and possibilities of direct satellite broadcasting. The discussion on the legal probelms of private law gave rise to a very open exchange of views from which it was seen that they were not insoluble.

Another area of change which has an essential bearing on broadcasting's future is the cable distribution of television programmes. In a number of European countries, cable operators have been licensed or are seeking licences to provide additional channels that would give viewers a wider choice than is available from broadcast systems. Undoubtedly, cable and cassette programme producing companies hope to be of mutual benefit to each other in this field. But for the EBU's Members the new techniques pose unprecedented legal problems in relations with copyright owners, performers and other rights owners. There could also be repercussions on the organic structures of broadcasting. Because of the rapid developments in this field, the Legal Committee is undertaking a general re-examination of the many complex legal problems involved.

While the ever-accelerating rate of technology is constantly raising new problems for the EBU's jurists to solve, it is the task of the Union's Technical Committee and associated working parties, with the assistance of the Brussels Technical Centre, to ensure that the new developments best meet Members' needs from a technical point of view. The years since 1950 have seen remarkable developments in broadcasting, ranging from the spectacular achievements of communication satellites to the less well-known but important trend towards automatic techniques on the transmitting side and significant advances in tape recording.

Managing the Spectrum

In addition to the new technologies, the Union has continued to devote attention to the more traditional broadcasting problems, of which perhaps the oldest is the most efficient use of the radio spectrum. This has become increasingly difficult in Europe due to the steady rise in the number and power of LF and MF transmitters. Reports on the occupation of the various frequency bands allocated to broadcasting with details of the sound and television transmitters using them are published regularly by the Technical Centre, based to a large extent on observations made at the Union's Receiving and Measuring Station at Jurbise-Masnuy in Belgium. The Station, which was inaugurated in July 1953, can make precise measurements of frequency and field strength in all the frequency bands allocated to broadcasting.

Another study of great important to broadcasting engineers is that of wave-propagation, which has necessitated the organisation, on an international scale, of field strength measurement campaigns. The results have made it possible to derive formulae and graphs from which field-strengths may be predicted under a very wide variety of conditions. The

protection of reception against interference of all kinds of both sound and television, has also been the subject of research;

This research work of the EBU, some of it in cooperation with other international bodies concerned with the same problems, has been especially useful to the broadcasting organisations of developing countries.

Cooperation is also to be found within the Technical Working Parties, which have evolved the many operational procedures for exploiting the vast Eurovision Network, and have found solutions to the numerous problems posed by the variety of standards by developing adequate systems of conversions and transcoding. These Working Parties have also been responsible for a continuous adaptation of the Network to the evolving requirements of Eurovision, as well as to new techniques.

But new techniques also require a rationalisation of working methods from time to time and with this in view the Technical Committee is actively pursuing a structural reorganisation. It is splitting its work into four major sectors – the technologies involved in producing programmes, transmitting and broadcasting them, together with a fourth sector in which will be grouped all the studies concerned with new techniques and methods.

Today's Priorities

In the field of production technology, the rapid development of the technical means for electronic news-gathering will remain the centre of interest, together with the recent developments in new types of television tape-machines and in the recording of sound on professional cassettes. As for broadcasting, the implementation, on 23 November 1978, of the new Plan for the Long- and Medium-Wave bands will result in increased activity in order to supervise this portion of the RF spectrum: in particular, efforts will be made to follow closely the progress in the introduction of new transmitters and possible increases in power. A degree of priority will be given to the study of the repercussions on the other European countries as regards the frequency assignments in Bands I and III and the progressive withdrawal of the older television systems in France, the United Kingdom and Ireland.

In the field of satellites, the European Space Agency proposes to radiate experimental transmissions from a direct broadcasting satellite in 1980-81 and preparations are being made to undertake technical tests in connection with these. In addition, a study will be made of the means for the broadcasting of radio programmes from a satellite under conditions that would possibly permit the use of portable receivers. All the studies that are being undertaken in the broadcasting field are of great importance in order to prepare for the ITU's 1979 World Administrative Radio Conference at which the frequency bands throughout the RF spectrum will be redistributed between the various radiocommunication services.

The digital coding of sound and pictures must also be the subject of international standardisation so that the undeniable advantages of this new technology may be used for the benefit of broadcasting without incurring penalties on the economic front.

As regards the transmission of programmes, apart from the current work of perfecting the network of terrestrial links (remote-switching systems, identification signals, communication systems), attention will be given to the possibilities of enlargement and improvement, at the operational level, that may be expected to result from the introduction of the European Communication Satellites. It is hoped to be able to undertake these studies in close collaboration with the CEPT (the association of European telecommunications authorities) and ESA.

All the above-mentioned studies are the subject of contributions to the ITU's CCIR and the CCITT regulatory committees in order to ensure that the work of the EBU in these areas is taken into consideration at a world-wide level.

As part of its role of keeping Members informed on all aspects of broadcasting, the EBU entered the publications field from the very start. The first number of what was then the 'EBU Bulletin' appeared in May 1950, three months after the Union's foundation. It was a roneo-typed production containing articles and information about legal programme and technical matters. In 1958, the Bulletin became a printed and illustrated journal and was renamed the 'EBU Review' and divided into two parts, now known as editions, published in alternate months – one dealing with technical questions and published from Brussels while the other, produced in Geneva, devotes itself to programmes, administration and law. The EBU also published Technical Monographs and Legal and Administrative Monographs. They started in 1964 and many have been of considerable assistance to Members in developing countries as they represent a synthesis of experience gained by Members in Europe.

Other EBU publications include reports of seminars and workshops, selected bibliographies on various aspects of broadcasting, and numerous technical documents. Thus, it can be said that while broadcasters are dependent on sound and vision for putting across their output to the general public, for the EBU itself, the printed word is a most important factor.

☆ ☆ ☆

Within this portrait of the European Broadcasting Union the aim has been to show that in the nearly 28 years of its existence the Union has provided the machinery through which its worldwide Members could work together, cooperate in joint projects, share ideas and reach decisions. The work has been assisted in all respects by the remarkable sense of 'family' which exists among the representatives of member organisations participating in the manifold activities and the fact that politics have been rigidly excluded with the result that international cooperation has been much improved and more effective.

The EBU's hope for the future is that it can continue to enlarge the possibilities of a free and increasing flow of radio and television programmes from country to country, from continent to continent, and thus make a contribution towards peaceful and efficient cooperation between all broadcasters for the benefit of peoples around the world. For this reason, it is looking forward to participating with the representatives of the other broadcasting unions in the Third World Conference of Broadcasting Organisations scheduled to take place in Iran in the first part of 1979. •

Finance for Telecommunications in the Space Age

J. L. Blonstein, Eurospace

THE DEBATE on telecommunications was first dominated by technological issues, to which were added social and economic issues. To a surprisingly limited degree has there been any discussion on operational and managerial matters, including the primary one of funding, and particularly with regard to large-scale telecommunications projects. This is especially true of satellite communications, where the market for services is growing into a major billion-dollar business and becoming a sizeable chunk of the telecommunications industry as a whole. As the number of existing and planned satellite services multiplies, the interest and involvement of manufacturers, bankers, insurance houses, stockbrokers and financial analysists becomes increasingly significant.

One organisation that has been involved in these questions for some time is Eurospace, whose 100 members represent most of the aerospace and telecommunications businesses in Europe. For some years Eurospace, under contract to the French and German governments and to the EEC and other international authorities, has been promoting the use of satellite communications in various parts of the world. In common with other bodies, Eurospace realised that the major problems lay not in the technologies, which were available and fully accepted by potential users, but in the sources of funding to implement those technologies in the countries that needed them.

Sources of funding – bilateral and multilateral aid, syndicated commercial loans, the bond markets, and private and institutional investment – were plentiful. But these monies were not finding their way into telecommunications at the levels needed to meet the gigantic growth expected during the next decade.

In too many instances, those who needed the telecommunications had limited knowledge of the sources of funds; those who held and allocated funds were woefully aware of the technologies and implications of telecommunications; and even those who built the equipment and provided the services had restricted views on the ways and means of raising and optimising the capital that was available throughout the world. The concept of using insurance in space communications, to cover income and to ease the path of lending, as practised extensively in the USA, was almost unknown elsewhere.

Last May a major conference brought together those who use telecommunications, those who make them and those who finance them. It was organised by Eurospace together with the European Space Agency and the International Telecommunication Union, and held in Paris. The 120 participants came from twelve countries in Europe, from the USA, from Africa and from Australia, and represented eighty organisations, including manufacturers, banks, posts and telecommunications authorities (PTTs), government ministries, insurance houses, stockbrokers, publishers, consultants, and the press, radio and TV.

Its aim was two-fold: one, to explain to the financial world the trends and implications of telecommunications technology and business and, two, to explain to the telecommunicators and the technologists the availability and constraints of financing. With these two aims met, it was then the intention to discuss what had been achieved in the past, and what could be achieved in the future, in the financing of telecommunications. The four main themes were the trends of technology and business in telecommunications: supplier financing; customers and their financial needs; and customer financing.

Technology and Business

It is possible to present here only a very brief summary of some of the papers and the discussions that followed. A volume of the complete proceedings is available from Eurospace.*

The preliminary theme and discussions on trends of technology and business in telecommunications ranged widely over the latest technology and services and the position of telecommunications manufacture in different societies. Sir Edward Fennessy, Deputy Chairman, UK Post Office, described the whole range of technologies applicable to telecommunications corporations. Particular interest was aroused by his references to the competition between waveguide and optical fibres, with his seeing the latter as a challenger to space communications in well-developed systems. Questions were raised, too, on his statements regarding trunk digital switching in the United Kingdom, and on his views on the difficulties facing Eutelsat.

After this introduction to the technological possibilities, the conference began to discuss the heart of the matter – finance. The sums of money are very large indeed. The market in the 1980s will probably carry investments in space systems of the order of $8,000 million. The ESA's Ariane launcher, capable of putting 900 kg satellites in geosynchronous orbit, is estimated to cost about $120-150 million for the manufacture and launch of six production vehicles and clearly needs pre-finance before costs are recovered from the users.

Dr Arendt, Deputy Director, Deutsche Bank, summarised the financial markets, the investors and lenders and their rules, and the particular question of financing the high technologies. He drew comparisons between the historical project financing of European railways in the nineteenth century and today's oil wells and gas fields, pointing out the different national approaches that exist today, and the limitations of the Euromarkets. He agreed, in later discussion, that the loan terms in Euromarkets were not necessarily geared to long-term projects nor to the level of funding that telecommunications requires.

**Finance for Telecommunications in the Space Age: Proceedings;* A4; 237 pages' published by Eurospace, 16 bis, Avenue Bosquet, 75007, Paris, France; 250 FF (postage included) or equivalent in US dollars or major European currencies.

He added that the international monetary situation leads to "tides" in money availability, and that, to obtain that money cheaply, one had to know or learn the tide tables.

Some provocative comparisons between the motivations and activities of investors on each side of the Atlantic were made by R Casement, Science Editor of 'The Economist'. He drew particular attention to the British banking scene which, he maintained, was not prepared, technically or intellectually, to invest in technology, and to British tax laws that effectively suppress all desire to risk investment in a small, growing company which could be the ITT of tomorrow. A member of the audience reminded him that the situation was not dissimilar 100 years ago, citing Morris's telegraph, and Bell's telephone.

Customers and Their Financial Needs

The range of customers that will be in the market for telecommunications in the next decade, according to one speaker, is "as varied as the varieties of space technologies that were to come". Dr Steiner, president of INTECO, described the kinds of customers that banks might expect to see, commenting on historical trends and on the changes that might be expected, taking into account the decreasing surface distances considered economical via satellite, and the consequent increase in the number of small national systems that would become established. He added that, while the total capital needs were enormous, they did not have to be provided in large parcels.

Overviews of the forms of financing that had been successfully applied in international and export projects were presented by Mr Peyrelevade, Credit Lyonnais, and Dr Horn, Dresdner Bank. Both confirmed that the banks are willing to lend to a borrower provided that he can offer guarantees and was a recognisable entity. They reviewed the international collaboration that exists between banking groups, and the advantages and disadvantages of borrowing nationally and internationally from the many sources available. Mr Peyrelevade commented on the problems of language, law, currencies, and export credit variations. Dr Horn maintained that European industry had no cause for complaint against the banking fraternity. He agreed with the other bankers in discussion that, while a European Export Bank would be useful, it was not essential. The problem was to find customers with sufficient security, and as long as industrial policy continued to be fragmented in Europe, it would not be easy to organise a smoothly-working European solution.

A major point of discussion arose when the bankers said they must be kept aware of planned programmes so that they could prepare for them. In return, the industrial participants suggested that bankers tended to sit back and wait instead of offering a commercial and entrepreneurial spirit.

Another banker, Mr La Blanc, surveyed the financing of two new US systems, the Tracking and Data Rely Satellite System (TDRSS) and the Satellite Business System (SBS) the first needing some $600 million and the second about $400 million. TDRSS proved to need government guarantee, while SBS will need the individual guarantees of the three partners (Comsat General, IBM and Aetna Life and Casualty).

The concept of satellite insurance was raised by Mr Barrett who had introduced it into the United States, and which was subsequently taken up by the European Space Agency and other users. (He was not to know that, not long after the conference, the ESA OTS satellite, which was insured through British underwriters, was to be lost because of a US launch vehicle failure, at a cost of $30 million). He reviewed the various forms of insurance now available, ranging from launch liability insurance, through loss of revenue cover, to incentive payment coverage for manufacturers. In answer to questions, he said that typical premiums were in the order of 6% to 10% of capital cost, but that the market is flexible and continuously changing.

Telecommunications and Social Development

Mr Mili, Secretary General, ITU, said that telecommunications was an aid to the economic and social development of the world and that the ITU attached great importance to increasing world recognition of that fact. His paper reviewed the massive increases in telecommunications that have occurred and are taking place, and the implications of space communications up to the level of direct satellite broadcasting. He presented a series of figures leading to estimates that indicated telecommunications investments in the 1980s will reach several hundred billion dollars, and warned of the increasing competition to be expected from the developing countries as they expanded their capacity to manufacture telecommunications equipment and to absorb investment accordingly.

The needs of the developing countries were also discussed by Mr Ndoung, Ministère de l'Economie et du Plan, Cameroons, who surveyed the telecommunications needs of the developing countries for national and inter-continental communications. He pointed out the importance of telecommunications to the development of these countries; particularly the development of the interior, rural areas, where adult education was a prime need, and where development could be self-generating if given the starting impetus of communication links. In answer to questions he reported that there was increasing aid liaison between the African countries and the Arab World, and he commented on the need to recognise the direct impact of loans for educational TV that could not show an immediate economic return.

A review of world aid, by Mr Stein of OECD, brought many questions when he presented figures of aid that ran into billions of dollars but confirmed that telecommunications gathered only a very small proportion of the total. He pointed out that the Development Assistance Committee, which determines the routing of loans and grants, looks first to welfare, but that it is the multilateral agencies who allocate funds to specific projects such as telecommunications. He agreed that the kind of aid given by a donor country often reflected its capacity to provide that particular equipment, and that there could be a relationship between the source of aid and the cheapest source of supply.

Industry suggested that in the particular case of the needs of development countries, the loan terms offered by the present markets were far too short. One or two bankers agreed that loan terms were not well matched to long-term needs, and that that was where governmental aid and governmental guarantees should be applied.

The participants were warned, however, not to generalise about the developing countries, which cover a wide spectrum

The BBC as Institution

A SUBSTANTIAL and highly significant analysis of the BBC has been finally published after some dozen years' gestation. Tom Burns, Professor of Sociology, Edinburgh University, first started interviewing BBC staff, at the BBC's request, in 1963.

He worked as sociologist-anthropologist inquiring into the nature of the BBC's organisation, and its role in society.

The BBC secretariat of that time did not wish the results to be published, but a later regime encouraged Burns not only to carry out more interviews in 1973 but also to publish a book.

The result, **The BBC: Public Institution and Private World** (Macmillan, London, £8.95), is a major document on the BBC's internal organisation, attitudes and principles during the crucial years of the sixties and early seventies, combined with some suggestive ideas on the BBC's relationship to the UK government and society during those years.

Professor Burns interviewed some 300 people in the BBC, at virtually all levels. His brief but searching questions and the length and frank, intelligent answers made up a large part of the book. The approach is historical.

Burns starts at the very beginnings of the BBC in the 1920s and describes Lord Reith's creation of the corporation's well-known ideal of public service broadcasting. This tradition disappeared, says Burns, in the sixties. The concept of public service broadcasting was replaced by claims for a new professionalism.

The reasons were partly specific to the business of broadcasting (for example, ITV's establishment of its commercial channel as the country's most popular and most profitable, and several innovations in broadcasting technology). But most of the reasons reflected general social trends in the UK, such as the increasing syndicalism in working life, the restlessness with traditional authorities, the general lack of self-confience amongst intellectual and organisational leaders, and financial stringency.

In the BBC, these wider pressures produced (perhaps not unavoidably) a retrenchment of bureaucracy and a widening of the gap between the administration and creative talent (both on the staff and free-lance).

The strength of Professor Burns' book is not in any particular confusion, but in its considerable documentation of how the BBC sees itself (as well as how such an experienced observer sees it), and in his perceptive analysis of the entire range of issues concerning a broadcasting organisation and its public.

The book has already evoked widespread interest and comment. Its publication at the time that the government, following the Annan Report, is preparing a White Paper on the future of broadcasting cannot but suggest it may have some influence on steering the BBC back towards (as Burns explicitly desires) a firmer concept of public service.

continued from page 32.

of opportunity, appropriateness, financial capability and ability to sustain repayments.

Remarks on aid led to further, unanswered, questions about the real applicability of those large sums to telecommunications in an environment of competition with projects that appeared to provide immediate relief or returns, and the problems associated with having foreign consultants evaluating the economic benefits of telecommunications in a developing country.

Most of the participants felt that it was the bankers who had profited most from the conference, in that they had become far more aware of the enormous size, and the implications, of the world's telecommunications markets in the next decade. This, in itself justified the conference, in that it will ease the passage of those who need future funding. But the manufacturers and users recognised that the basic rules of financing would not change – the bankers would still need guarantees. The industrialists took note also of the bankers' call for stronger European collaboration in place of the present industrial fragmentation, which can only lead to fragmentation of financing, to everyone's disadvantage; while the bankers, in turn, recognised that accepting their need for guarantees they could see profit in telecommunications in the 1980s. •

Books

Animation Projects in the UK (National Youth Bureau, 17/23 Albion Street, Leicester; 90pp; 1977; £1.50) by Frances Berrigan. A series of most useful and informative descriptions of some 97 projects in the UK that are engaged in animation; the five sections cover education, sport, arts, communication media, community work.

Antiope (Ref: CCETT A 740284 F; Centre Commun d'Etudes de Television et Telecommunications, 2 Rue de la Mabilais, BP 1266, 35013 Rennes; 21pp; 1977; free). A brief summary of the specifications of the CCETT's teletext system.

Communicate (Prentice Hall International; 205pp; 1977; ISBN 0 13 153460-2; £5.95 or $10.95) by C. Northcote Parkinson and Nigel Rowe. Parkinson (of "Parkinson's Law") and Rowe suggest that the inability of industry (almost entirely equated herewith senior management) to communicate, both internally and externally, is now its major stumbling block. They propose several techniques and principles for good communication. The book is a modest handbook, and its ideas on communication are decidedly traditional and pragmatic. It is most interesting, perhaps, for the authors' comments on a united Europe, and on the future of industry there and in the USA; in both regions the authors regard industry as a possible saviour for a moribund political system.

Communication Policy and Planning for Education and Development (Institute for Communication Research, Stanford University, Stanford, California 94305; 88pp; 1977; price on application) by John K. Mayo and Peter L. Spain. The report of a conference held on 11-16 July 1976 at Stanford University. The conference papers are available separately from Stanford University; this book provides a synthesised but detailed account of the presentations and discussions, and the conference participants etc.

Community Radio in Canada, 1977 (Canadian Broadcasting Corporation; Office of Community Radio, PO Box 500, Station A, Toronto, Ontario; 160pp; 1977; free) by the CBC. A collection of fact-sheets on 43 community radio stations (the first edition in 1974 profiled 20 stations).

The Corporate Village (IDOC Europe Dossier 4; International Documentation and Communication Centre, Via Santa Maria dell'Anima 30, Rome 00186; 238pp; 1977; price on application) by Cees Hamelink. An analysis of the role of transnational corporations in international communications, with numerous charts and figures. The author has collected a

wide range of material as evidence for his argument that these and other corporate organisations direct the international flow of communications for their own internal purposes.

Counterpart Training Programmes for Social Communications Secretary (Catholic Media Council, Publizistische Medienplanung Fur Entwicklungsländer, Postfach 1912, D-51 Aachen, Veltmanplatz 17; 40 pp; 1977; free) by Joseph Mukwaya and Joseph Healey. A summary of the training programme taught by the Association of Members of Episcopal Conferences in Eastern America (AMECEA).

Educational Media Yearbook 1977 (Bowker, New York; 433pp; 1977; ISBN 0 8352 0948 2; £15.75) edited by James Brown. Articles and listings on educational media in fields of "instructional-educational technology, librarianship, information science and telecommunications".

Electronic Inventions 1745-1976 (Pergamon, Headington Hill Hall, Oxford or Fairview Park, Elmsford, New York 10523; 164 pp; 1977; ISBN 0 08 020982 3; £5.50 and $10.00) by G.W.A. Dummer. Charts, lists and descriptions of inventions and inventors.

Euronet: Guidelines for Cooperation Between Data Base Suppliers and Host Organisations (Commission of the European Communities, Boite Postale 1003, Luxembourg [ref: CK-22-77-427-EN-C]; 10pp; 1977; free) by ICSU AB. Brief notes on actual and possible agreements between data-base suppliers and hosts, with comments on how responsibilities may be shared.

Film: The Democratic Art (American Film Institute and Little, Brown, Boston; 518pp; 1977; ISBN 0 316 47370 7; $19.95) by Garth Jowett. History of the film industry, institutions, cinema-going and commercial activities.

The Fontana Dictionary of Modern Thought (Fontana, London; 684pp; 1977; ISBN 0 00 634884 X; £2.95) edited by Alan Bullock and Oliver Stallybrass. A massive work of reference whose facts are reliable but whose choice of items and their treatment is rather restricted (with a bias towards the Anglo-Saxon literary) with an odd mixture of the old-fashioned and the fashionable.

The Group of Thirteen (Centre for Art and Communication, Elpidio Gonzalez 4070, 1407 Buenos Aires; 80pp; 1977; price on application). An illustrated description of the "Group of Thirteen" at the XIV Bienal de San Paulo, held in October-December 1977. The artists include Leopoldo Maler, Victor Grippo, Jorge Gonzalez Mir, Luis Benedit, Jorge Glusberg and Glorindo Testa.

Information et Communication (Conseil Français des Etudes et Recherches sur L'Information et La Communication, 83 bis, Rue Notre-Dame des Champs, 75006 Paris; 54pp; price on application). A bibliography of unpublished works and "works-in-progress". The editor, Jean Cazeneuve, regards it as the first step to a fully analytic and cross-referenced publication.

Italian Broadcasting (Council of Europe, Strasbourg; free). The Council of Europe has produced three brief (29-36pp) reports on Italian broadcasting in their CCC series. **'Free Radio' in Italy** (CCC/DC/76/57) by Filippo M. de Sanctis, member of the Conseil de Direction du Mouvement de Collaboration Cirique in Rome; **Independent Television Networks in Italy at the Turning Point from Cable to Broadcasting** (CCC/DC/76/92) by Francesco Cavalli-Sforza, Agnese Donati and Huw Evans; and **The Radio Phenomenon in Italy** (CCC/DC/76/93) by Roberto Faenza.

Massenmedien in Salzburg (Landespressebuero, Chiemseehof, A-5010 Salzburg; 190 pp; 1977; free). A useful report on mass media patterns and usage in Salzburg, produced by the Office of Public Information of the Salzburg Provincial Government, and carried out by the Department of Mass Communications of the University of Salzburg. Because Salzburg lies on the border of Austria and Germany, it can receive both countries' programmes; 56% of households can receive 5 TV channels. It is an interesting study which will become more useful when comparative statistics (eg, on Vienna, Graz) are available.

Marxism and the Mass Media: Towards a Basic Bibliography (International General, PO Box 350, New York, NY 10013 or International Mass Media Research Centre, 173 Avenue de la Dhuys, 93170 Bagnolet, France; 95pp; 1975; ISBN 0 88477 007 9; $4.00). A continuing series: No. 3, which contains Nos. 1 & 2, and Nos. 4-5, each cost $4.00. It is a research project of the IMMRC, a section of International General, which aims to document world studies of marxism and communications.

Media and the Law (Media Guide No. 1; Brennan Publications, 39 Legh Road, Sale, Cheshire, UK; 32pp; 1977; ISSN 0 140 2056; £1.20) by Anthony James. A useful pocket-sized handbook giving basic up-to-date information; with numerous examples of court cases and decisions. First of a series: other subjects will include media graphs and tables, court reporting, the Press Council, British media history, and working in newspapers.

Media Studies in Education (Reports and Papers on Mass Communication, No. 80; UNESCO, Place de Fontenoy, 75700 Paris; 92pp; 1977; ISBN 92 3 101446 3; price on application) prepared by the International Film and Television Council. Articles on media education in Denmark, Finland, Fance, Italy, Germany (FR), Netherlands, Sweden, UK, USA, USSR.

The Myth of Mass Culture (Macmillan, London; 146pp; 1976; ISBN 0 333 21407 2; £2.95) by Alan Swingewood. A historical analysis of the development of marxist thinking, the concept of culture and the role of mass communications. The author analyses three major versions of mass culture (the "marxist"; the "literary" and that of "cultural pluralism") and suggests they all favour a "static, ideological concept of culture either rooted in or forced upon a largely passive mass (and) reject culture as praxis, a means of transforming the world through consciousness, values and action" And "if culture is the means whereby man affirms his humanity and purposes and his aspirations to freedom and dignity, then the concept and theory of mass culture are their denial and negation".

News and Current Events on TV (Edizioni RAI' Radiotelevisione Italiana, Via Arsenale 41, Torino; 220 pp and 218 pp; 1976; price on application). The papers and discussions of the 1975 Prix Italia in two volumes. The papers are 'Televised Current Events Sequences or a Rhetoric of Ambiguity' by Violette Morin, and 'The Television News Programme: Fragmentation and Recomposition of our Image of Society' by Franco Rositi (each in Italian, French and English versions). The discussions (in the speaker's original language) feature Jacques Durand, Umberto Eco, James Halloran, George Gerbner, Brian Winston, Tapio Varis, Stuart Hall and Richard Hoggart.

Non-Formal Education and the Rural Poor (Michigan State University, East Lansing, Michigan 48824; 248 pp; 1977; price on application) by Richard O. Niehoff. The report of the second international conference and workshop held on 26 September – 2 November 1976 at Michigan. Topics covered include both general issues (World Bank policies, AID policies, extension principles, using the media) and specific country situations (including Bangladesh, India, Colombia, Korea, Guatemala, Ecuador, Botswana).

On the Consumption of Industrially Produced Culture in Finland (Institute of Journalism and Mass Communication, University of Tampere, Kalevantie 4, 33100 Tampere 10; 68 pp; 1977; ISBN 951 0585 4; price on application) by Leena Paldan-Tuomas Takala. An empirical survey, with some theoretical comments on the concept of mass culture. It was prepared for the working group set up by the UNESCO Finnish National Commission study on the planning of cultural development.

Planning, Presenting, Producing the Radio Programme (Asian Institute for Broadcasting Development; 247 pp; 1976; price on application) edited by Howard Gough, UNESCO Regional Communication Adviser. A well-designed, practical handbook for making radio programmes, with special emphasis on radio as an educational channel for development support.

La Pratique de la Communication en Milieu Rural (Agence de Cooperation Culturelle et Technique, 19 Avenue de Messine, 75008 Paris; 170 pp; 1977; price on application) edited by Jean-Claude Crepeau. Report of a seminar held on 8-11 November, 1976, in Bamako, Mali. It contains a large amount of factual information of communication activities in rural areas in Africa, as well as

the seminar's discussions and conclusions. Following the seminar, the Agency formulated a programme of activities in the field of rural communications.

Prix Jeunesse 1977 (Prix Jeunesse, Bayerischer Rundfunk, Rundfunkplatz 1, 8 München 1; 36 pp; 1977; free). The Prix Jeunesse's annual report, giving details of the seminar on 'Children and Parents in Television Programmes', including presentation, conclusions, participants, etc.

Proyecto Ratelve (Ediciones de la Libreria SUMA' Real Sabana Grande 90, Apto del Este 5346, Caracas; 344 pp; 1977; Bs. 54.00). The report presented to the Comite de Radio y Television de la Comision Preparatoria del Consejo Nacional de la Cultura by the Instituto de Investigaciones de Comunicaciones (ININCO). It describes the existing Venezuela broadcasting system (which is dominated by commercial interests) and proposes several new structures. First, it defines an ideal model; then, it analyses the existing system and suggests a new communications policy and a new body, RATELVE (Radio Television Venezualan).

Research at the Communications Studies Group 1970-77 (Long Range Research Report 14; Post Office, THQ/TSS6, 88 Hills Road, Cambridge CB2 1PE; 56 pp; 1977; free) by Ederyn Williams. A report of the seven years of research at CSG, London University. It provides a useful survey of some significant lines of research.

The Show and Tell Machine (Dial Press, New York; 426 pp; 1977; ISBN 0 8037 8614 X; $10.00) by Rose K. Goldsen. The author is Professor of Sociology at Cornell University as well as presenter of a weekly radio programme called 'Blowing the Whistle on Television' and a syndicated newspaper column called, as this book, 'The Show and Tell Machine'. The book is subtitled: 'How Televison Works and Works you Over'. Professor Goldsen treats television primarily as a means whereby advertisers, etc, can capture individual consciousness, and shows how the television environment is now in the USA, inescapably, the dominant one: "Television now holds a virtual monopoly on whatever artistic and symbolic forms have a chance to be widely showed throughout society". In the final chapter, the author suggests that TV's domination of today's US environment is tantamount to the thought control described by Aldous Huxley in 'Brave New World'.

The Social Impact of the Telephone (MIT Press, Cambridge, Massachusetts and London, UK; 502 pp; 1977; ISBN 0 262 16066 8; $14.95) edited by Ithiel de Sola Pool. An interesting collection of the essays that were originally presented at MIT's series of multidisciplinary seminars on the centennial of the telephone. Authors include Asa Briggs, Jacques Attali, Colin Cherry, Brenda Maddox, Jean Gottman, Alex Reid and Paladthgu V. Rao.

Telemedicine in Alaska (Institute for Communications Research, Stanford University, Stanford, California 94305; 233 pp; 1976; price on application) by Dennis Foote, Edwin Parker and Heather Hudson. The final report of the evaluation of the uses of the ATS-6 satellite for biomedical purposes in Alaska. The study concluded, *inter alia*, that the satellite network was useful and helpful; that the unique visual qualities of video transmission were critical in 5-10% of consultations, and that priority should be given to audio links (especially on grounds of cost) and that "reliable operational audio channels were absolutely essential to the delivery of health care in Alaska".

Telecommunications and the Press (Long Range Research Report, No. 15; Long Range Intelligence Division, Post Office Telecommunication Headquarters, 88 Hills Road, Cambridge; 48pp; 1977; price on application) by Anthony Smith. A historical and analytic survey of the impact of telecommunications upon print.

United Nations Conference on Desertification (A/Conf.74/36, United Nations; 139 pp; 1977; price on application). The report of the UN Conference on Desertification held on 29 August – 9 September in Nairobi. It includes the conference objectives, principles, recommendations and resolutions, as well as the constitution and internal organisation of the Conference. An annexe contains the important report on the processes and causes of desertification and the plan of action to combat desertification.

Video: A New Information System? (Council of Europe, CCC/DC/77/7, Strasbourg; 50 pp; 1977; free) by Anne-Marie Laulan and others. An English summary of a study on video and its influence on concepts and means of delivering information. The authors analyse several video projects and make several comments and criticisms.

Video Yearbook 1978 (Dolphin Press, Link House, West Street, Poole, Dorset; 440 pp; 1977, ISBN 0 85642 L66 2; £7.95) by Angus Robertson and the staff of **Video and Audio Visual Review**. Useful, comprehensive, factual handbook of television systems and services.

A Voice from Afar (McGraw-Hill Ryerson, Toronto and New York; 304 pp; 1977; ISBN 0 07 082536 X; $0.00) by Robert Collins. A general, journalistic history of telecommunications in Canada, based on the personalities involved. It provides a readable and useful summary.

Wie Heeft er No geen Boodschap Aan? (Nederlandse Omroep Stichting, PO Box 10, Emmastraat 53, Hilversum; 64 pp; 1977; price on application). 'Who is Still Listening'; a collection of articles on Dutch radio's history and development, and some audience research.

World Administrative Radio Conference: Geneva 1979 (BBC, Broadcasting House, London W1; 16 pp; 1977; ISBN 0 563 17424 2; free). BBC proposals to the Home Office for changes in the Broadcasting Service and the Broadcasting Satellite Service frequency allocations.

Periodicals

Comcom (Comcom, 8 Millfield Close, Farndon, Cheshire; quarterly; free). A new newsletter (first issue, **August**) published by the vigorous Comcom (community communcations) group in the UK and covering small-scale, low-cost uses of information services run on a community basis.

CPB Report (Corporation for Public Broadcasting, 1111 16th Street NW; Washington, DC 20036; every fortnight; free). The **Nov 7** issue has a chronological report on 'The First Ten Years of Public Broadcasting'.

Fernsehen und Bildung (Internationales Zentralinstitut für das Jugend und Bildungsfernsehen; Verlag Documentation, Possenbacher Strasse 2, D-8000 München 71; quarterly; single copy £6.00). **Vol. 9, No. 2/3** is a special English-language issue containing the papers of the 1975 Prix Jeunesse seminar on 'Television and Socialisation Processes in the Family'.

Indian Journal of Communication Arts (Hem Publications Ltd, C 123, Greater Kailash-1, New Delhi-1100.8; monthly; Rs. 3.00 or $1.00). **Vol. 2, No. 8** contains a collection of views on the desirability of turning All India Radio and Doordarshan into autonomous corporations.

Journal of Social Issues (Society for the Psychological Study of Social Issues, PO Box 1248, Ann Arbor, Michigan 48106; quarterly; single copy $5.00). **Vol. 32, No. 4** is a special issue, 'Television and Social Behaviour', edited by Robert D. Singer and Rober M. Kaplan. Articles include 'Continuities and Discontinuities in Media Usage and Taste: A Longitudinal Study' by Hilde Himmelweit and Betty Swift which was summarised in 'InterMedia' Vol. 3, No. 2; other authors include George Comstock, Samual Ball, Eli Rubinstein, Seymour Feshback, Steven H. Chaffee and Albert R. Tims.

©1977 International Institute of Communications, Tavistock House East, Tavistock Square, London WC1H 9LG; Tel 01-388 0671; Telex 24578 IICLDN; Cable WIDECAST LONDON.
ISSN: 0 309 118X. InterMedia is an independent magazine published by the IIC. It does not necessarily express the policies or views of the Institute or its members. Credit as source: InterMedia, journal of the International Institute of Communications.

Editor John Howkins.

InterMedia is published in February, April, June, August, October and December. Copies are sent free to all members of the IIC. Subscription rates (excluding postage): Individuals: £7.50; Institutions: £10.00. Single copies: £1.50.

Typesetting by Red Lion Setters, 27 Red Lion Street, London WC1R 4PS.

Printed by Tradsgreat Ltd, 284 London Road, Wallington, Surrey.

Broadcasting Unions Play Increasing Role

INTERNATIONAL relations, especially in terms of development and dependency, and under the impact of new communication services, are changing rapidly in new and more diverse directions. These changes are putting ever-increasing stress on the international organisations that operate as links and sometimes as leading actors in their particular fields. Major legal, financial, political and cultural issues often have to be dealt with at the international level before they have been comfortably solved – or, sometimes, even understood – at the national level.

The stresses and challenges are especially noticeable in the field of information and communication. International organisations here are not only affected by these changes *directly*, but their actions and decisions influence the spread of awareness (how far, to whom, when) and shared solutions in other areas.

In spite of their dual importance, the multitude of organisations concerned with communications, and the networks that link them, are relatively little know and understood.

Each tends to generate its own ambience, its own contacts and networks and, often, its own 'public'. Each operates separately, according to its own character and structure. As a group, they have never been studied in a comprehensive manner.

Certain distinct types can be discerned, however, particularly in terms of their memberships. At the level of intergovernmental organisations, the prime body is the United Nations, which is especially significant in the fields of human rights, international law and (through the United Nations Development Plan) in development planning. Several UN agencies have specialised mandates – eg, the International Telecommunication Union (ITU), the World Intellectual Property Organisation (WIPO) and UNESCO. In addition, for a large number of other organisations dealing with health (eg, WHO), meteorology, aviation, etc, communication is essential, and increasingly playing a primary role in each organisations' strategies.

At the non-governmental level, a proliferation of operational, professional, manufacturing, trade, research and technical organisations and associations form a series of interlocking, partly overlapping, and more or less comprehensive networks. Some of these are directly generated by communication interest – eg, transnational TV/film facility companies, and news agencies. Other are more indirect, such as tourism and transportation.

In this issue we begin a series of articles on a number of aspects of international cooperation in communications. We have chosen to start with the non-governmental broadcasting unions. These represent an important and in certain respects highly successful cases of international cooperation. They have evolved principles and guidelines which, while not perfect, have provided surprisingly conducive to action that is positive and effective. These principles might be most useful in other fields. Moreover, the unions have to cover a wide range of aspects at the same time – policy, technical, legal, programming – and have to face, and must continually face, a gamut of new issues.

There are now a number of broadcasting unions and associations providing international, professional cooperation:

– the 'regional' broadcasting unions, whose core members are generally drawn from a specific region, are still the most important. This category includes the European Broadcasting Union (EBU); the Organisation Internationale de Radio et Television (OIRT), with headquarters in Prague, and comprising the Eastern European countries that managed the Intervision network; the Arab States Broadcasting Union (ASBU) with headquarters in Cairo; the Asian and Pacific Broadcasting Union (ABU) in Tehran, Tokyo, Kuala Lumpur and Sydney; the Union de Radiodiffusions et Télévision Nationales Africaines (URTNA) in Dakar, Bamako and Nairobi; and similar unions in the Caribbean (CBU), for the Ibero-America region (OTI), and for the Associacion Inter-Americana Radio-Televisione AIR).

– the associations of broadcasting organisations from countries sharing linguistic or other links; for example the Commonwealth Broadcasting Association and the Communaute Française.

– the associations based on religious grounds; for example the World Association for Christian Communication (WACC), the International Catholic Association for Radio and Television (UNDA), and the Islamic Broadcasting Association.

Many broadcasting organisations are members of several unions or associations at the same time; for example, some are members of the EBU, ASBU, URTNA and the Islamic Broadcasting Association.

There is no single comprehensive worldwide body for these unions. Links at the inter-governmental level are plentiful (ITU, WIPO, etc). But the broadcasting unions have nothing permanent. A series of ad hoc practical and operational links and degrees of cooperation have developed over the years, to a fine degree of sophistication, but there is no permanent secretariat or structure, or a common meeting place. The only exception is the worldwide conferences that the unions organised in Rome in 1971 and in Rio de Janeiro in 1975. A third is planned to be convened in Tehran in 1979.

There are many diverse opinions on the need and desirability of a permanent structure at the international level. Some continually propose it; other says it is neither feasible nor desirable in view of the unions' wide range of different structures and objectives. Some groups feel that intensified practical collaboration represents the best way to establish and strengthen cooperation at the worldwide level.

We start in this issue with the European Broadcasting Union because it is the oldest and largest of the existing unions, and some of its initiatives such as Eurovision have served as models for similar undertakings in other parts of the world. •

J.A.H.